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AMERICAN BUILDER

AND
BUILDING
AGE

THE WORLD'S GREATEST BUILDING PAPER



Small Homes Program
\$1.00-A-Day House

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'CELOTEX INSULATION'

OUR CUSTOMERS SAY—



'SWELL!'"

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62nd

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AMERICAN BUILDER

and Building Age

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the all-important factor in house sales!

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with no messy dishwashing, no garbage to tend, with trouble-free food preservation, modern electric cooking, and ample storage space. One used the recognized products of a nationally known manufacturer—General Electric—to help him make his homes appealing.

No, the price tag isn't always the most discussed feature of a house. Other factors may be even more important. And to the builder who wishes to consider *all* phases of modern house merchandising, the G-E Home Bureau offers its services. Builders all over the country are using these services—for additional profits from more sales. Why not fill out the coupon and mail it in today? It places you under no obligation.

Your prospects know—It's Easy to Stay Young Electrically

Remember this —

If you, a builder, provide G-E equipped houses, you not only give your clients a better buy but you arm your salesmen with new customer appeals that are becoming increasingly important—and the payments on the house are increased only 10 or 15 cents a day.

General Electric Home Bureau

Dept. AB-402—1285 Boston Ave., Bridgeport, Conn.

Please send me details of the G-E House Merchandising Plan.

☐ I am building for resale.

☐ I am building my own home.

Name.....

Address.....

City.....State.....County.....

GENERAL  ELECTRIC

PUBLISHER'S PAGE

Government Spending Vs. Business

ESTIMATES of expenditures on housing construction in the United States vary widely because some include more communities and kinds of construction than others. The estimates for 1929-1939 given on this page in January were based on the Dodge figures. Estimates by George Terborgh of the Federal Reserve Board for 1922-1938, inclusive—to which has been added a comparable estimate for 1939—are as follows:

1922..\$3,387,000,000	1931..\$1,379,000,000
1923..4,395,000,000	1932..515,000,000
1924..4,772,000,000	1933..373,000,000
1925..5,135,000,000	1934..419,000,000
1926..4,838,000,000	1935..813,000,000
1927..4,645,000,000	1936..1,374,000,000
1928..4,355,000,000	1937..1,718,000,000
1929..3,194,000,000	1938..1,594,000,000
1930..1,824,000,000	1939..2,128,000,000

9 year totals	
\$36,545,000,000	\$10,313,000,000
Annual average	
\$4,061,000,000	\$1,145,000,000
Annual average per family.....	\$143
	\$37

Contractors, manufacturers, material dealers and their employees should try to find out (1) *why* this enormous decline in housing construction occurred, (2) *why* it has recovered so little, and act accordingly.

NO doubt there are several reasons. The people have had less income. Home building has suffered from increased competition for the people's money by other industries—especially the automobile industry—and probably also from conditions within the industry itself such as are being attacked in anti-trust suits. But there has been another important cause—viz., *that our governments, especially the federal government, have been taking more and more of the people's money and spending it for them.*

In the nine years ending with 1930 average annual income per family was \$2,480; the people spent an annual average of \$143 per family for home building; and

annual expenditures of the federal government for all purposes were \$115 per family—*only four-fifths as much as was spent on homes.*

In the nine years ending with 1939 average income per family was only \$1,870; the people spent an annual average of only \$37 per family on homes; and the federal government spent an annual average of \$213 per family—*six times as much as was spent on homes.*

In 1925, when home building reached its peak, the people spent \$183 per family on homes; and the federal government spent only \$111 of the average family income—less than two-thirds as much. In 1939, after six years of "recovery", the people spent only \$66.50 per family on homes, while the federal government spent \$267 per family—*four times as much.* In 1925 the people spent 7 per cent of the average family income on homes, and the federal government spent only 4½ per cent of that income. In 1939 the people spent only 3 per cent of the reduced average family income on homes—and the federal government spent 13 per cent of it.

ALL of which powerfully illustrates, like innumerable other facts, that *the people cannot let their governments go on taking more and more of their money to spend on other things, and at the same time have enough of it left to spend on homes—or anything else on which they want to spend it.*

The issue of government versus private spending is the most important before the American people. Hugely increased government spending has been done for years to promote "recovery"—and largely because of it *there has been less recovery than from any previous depression.* The home building industry has suffered the most from this failure of recovery—and, therefore, should be the *most energetic in every community in exerting influence on all politicians to reduce almost every form of government spending, local, state and national.*

Samuel O. Dunn

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3 SAVINGS WITH 'INCOR'

ON COLD-WEATHER FLOOR JOB

ENJAY CONSTRUCTION COMPANY
INCORPORATED
CHICAGO
160 NORTH LA SALLE STREET
PHONE RANDOLPH 9
February 22 1939



Lone Star Cement Corp.,
228 North La Salle Street,
Chicago, Illinois.
Gentlemen:

Att: Mr. Warren F. Smith.

We recently completed a trucking terminal for the Silver Fleet Motor Express, Inc. at 3357 South Justine Avenue, Chicago, in six calendar weeks. In the final week we still had to pour 36,000 square feet of 5" and 6" floor, with outside temperatures averaging about 100 F.

It was decided that Incor would provide a concrete of sufficient strength to withstand truck loadings as high as twenty tons gross, within the short time at our disposal.

The results were completely satisfactory. We used preheated materials and hot water with a mixer flame burner, and then kept the air temperature up with oil and coke salamanders. Cost records showed an ultimate saving in the slabs, allowing for a slight increase in cement cost, due to:

- 1 Shorter period of temporary heat
- 2 Lowering of finishing labor costs
- 3 Possibility of doing all work within the building, since our materials and equipment at the final stages of pouring, were located on concrete slabs which had been poured a few days earlier.

In addition to its standard uses we have availed ourselves of Incor, in emergencies with splendid results. The Silver Fleet Motor Express Job used 2229 bags of Incor Cement.

Yours very truly,
ENJAY CONSTRUCTION CO.
W. F. Smith

LONE STAR CEMENT CORPORATION
MAKERS OF LONE STAR CEMENT . . . 'INCOR' 24-HOUR CEMENT

Heat and
Protection
Supplied

Depend on
Incor

Temperature
10 Degrees

Incor Saved
3 Days

AMERICAN BUILDER

AND BUILDING AGE

Demonstrating Low Cost Homes

IN 1940, for the third year, a substantial group of building material and equipment manufacturers is campaigning to acquaint the public with the fact that good low cost homes can be and are being built today by private enterprise, privately financed—the Dollar-a-Day house and less, which are ideally suited to the average needs of the average American family, even of low incomes; and all without government subsidy or tax exemption.

This group of building industry men is informally organized under the title of National Small Homes Demonstration, Inc. Its program for this year is described in another part of this journal. It is a practical, sensible program adaptable to any and every local community. Its benefit to local building industry men will depend entirely on themselves; they are urged to adopt and use this Demonstration plan, and thereby enjoy its stimulating effects in their own local home building situation.

"How to Acquire a New Home" is a new popular-appearance booklet prepared for use in this campaign this year. One of the strong points it makes is that under the ultra liberal financing methods now in use there is no such thing today as a "home-owner" class.

"The 'home-owning' class disappeared between 1935 and 1940," this booklet states. "In its place came a chance for *every family which can pay rent* to use the money . . . the same money in the same amount . . . to acquire a better place in which to live on a permanent basis.

"Did you know that on August 1, 1939," the explanation continues, "it became possible for the first time in America to buy a \$5,000 house and lot for \$500 cash and less than one dollar per day? The monthly payment on a \$4,500 loan covering a \$5,000 property under the new 4½ per cent FHA, 20-year plan is \$29.57. The payment on the same loan for a 25-year period is \$26.15.

"Did you realize that the 5 per cent down payment permissible if your home costs \$2,500 or less is only \$125, or not quite the full cost of a good radio?

"These facts will be news to most families. The ultra-liberal FHA regulations are still too recent to be widely understood.

"There certainly is no 'home-owning' class left when half the cost of the most inexpensive small automobile will make possible the purchase of a \$4,000 home good for a lifetime."

A very helpful chart is also presented in this booklet to help the prospective home buyer analyze in dollars

and cents the monthly cost of \$2,000 to \$5,000 homes acquired *like rent* under FHA terms.

The table reproduced below, covers loans on complete property, including both house and lot valued from \$2,000 to \$5,000. The same rate of payment obtains on loans in larger amounts, and these may easily be calculated from the figures. For houses costing more than \$6,000 the down payment may be 10 per cent on the first \$6,000 valuation and 20 per cent on the valuation over \$6,000.

Compare these MONTHLY PAYMENTS with the RENT YOU PAY!
Cost of Home Ownership with a 20-Year FHA Loan at 4½% Interest

Appraised value of house and lot.....	\$2000	\$2500	\$3000	\$3500	\$4000	\$4500	\$5000
Maximum loan (90%).....	\$1800	\$2200*	\$2700	\$3100*	\$3600	\$4000*	\$4500
Down payment.....	\$200	\$300	\$300	\$400	\$400	\$500	\$500
Monthly payments on 20 year loan.....	11.39	13.93	17.09	19.62	22.79	25.32	28.49
Average mortgage insurance premium ¹	.44	.52	.65	.75	.86	.96	1.08
Average total monthly payment	11.83	14.45	17.74	20.37	23.65	26.28	29.57
Add fire insurance27	.34	.40	.47	.53	.60	.67
Add taxes (Estimated)*	2.48	3.10	3.72	4.34	4.96	5.58	6.20
Total Monthly Payment	14.58	17.89	21.86	25.18	29.14	32.46	36.44

Cost of Home Ownership with a 25-Year FHA Loan at 4½% Interest

Appraised value of house and lot.....	\$2000	\$2500	\$3000	\$3500	\$4000	\$4500	\$5000
Maximum loan (90%).....	\$1800	\$2200*	\$2700	\$3100*	\$3600	\$4000*	\$4500
Down payment.....	\$200	\$300	\$300	\$400	\$400	\$500	\$500
Monthly payments on 25 year loan.....	10.01	12.23	15.01	17.01	20.02	22.24	25.02
Average mortgage insurance premium ¹	.45	.55	.68	.77	.90	1.00	1.13
Average total monthly payment	10.46	12.78	15.69	18.01	20.92	23.24	26.15
Add fire insurance27	.34	.40	.47	.53	.60	.67
Add taxes (Estimated)*	2.48	3.10	3.72	4.34	4.96	5.58	6.20
Total Monthly Payment	13.21	16.22	19.81	22.82	26.41	29.42	33.02

(1) This amount for mortgage insurance (¾ of 1 per cent) is the average for entire term. The premium in each year is paid on unpaid balances.

(2) Taxes shown are only estimated averages.

*Mortgages are insurable only in multiples of \$100.

Such attractive buying terms based on reasonable building costs will extend the potential area of home building and home ownership in the United States by millions of families.

\$1.00-a-Day Home Is 1940 Goal

A Program Sponsored by Many Building Industry Groups Will Show, Locally, How Good Low Cost Homes Are Built

By H. R. Northup

Secy. National Small Homes Demonstration, Inc.

THERE is the story of Mose, the colored man, who despite the fact that he had had more than his share of life's troubles was nevertheless of an extremely cheerful disposition. His boss, knowing the circumstances, said to him—"Mose, after all your hard luck how do you stay cheerful?" Mose replied—"Well, I tell you boss, I've learned to cooperate with the inevitable."

This story, in a sense, can be applied to the building industry. If and when the building industry learns to "Cooperate with the inevitable" it will have the cheerful, happy disposition that the story attributes to Mose.

The "inevitable," as far as the building industry is concerned, is represented by its ability to deliver good low-cost housing to the American family of low income, at monthly payments that it can afford.

There are still too many elements in the building industry responsible for the construction of housing who are saying it can't be done; and these people are far from cheerful. But there are many builders, realtors, and retail lumber dealers who in the past three or four years have learned how to build a good home at low cost and to deliver it at a fair price, who have learned to smile and as they continue to build this type of housing they continue to be cheerful and happy.

Nobody has a right to complain about building conditions for 1940. Whether or not the building business is good is going to depend on the building business itself. Every factor bearing on an abundance of profitable residential construction during the year is favorable.

Without exception men that know predict an increase in residential construction for 1940. To anyone who has

studied to any degree the problems facing the building industry it is evident that the following circumstances, which would make for a good business year, are present:

- first*, a market of over three million families of moderate income;
- second*, the most liberal mortgage financing in the history of the United States;
- third*, the lowest interest rates on money in our history;
- fourth*, the largest savings in our history;
- fifth*, an extremely low residential vacancy rate in the majority of our cities and towns;
- sixth*, increasing rent trends, and
- seventh*, moderate costs of building materials which will in all probability go no lower.

There has been talk, and there continues to be talk, on the part of the building industry of the necessity of creating so-called consumer demand. It has been our experience, after three years of activity in the National Small Homes Demonstration work that the creating of

National Small Homes Demonstration Leaders

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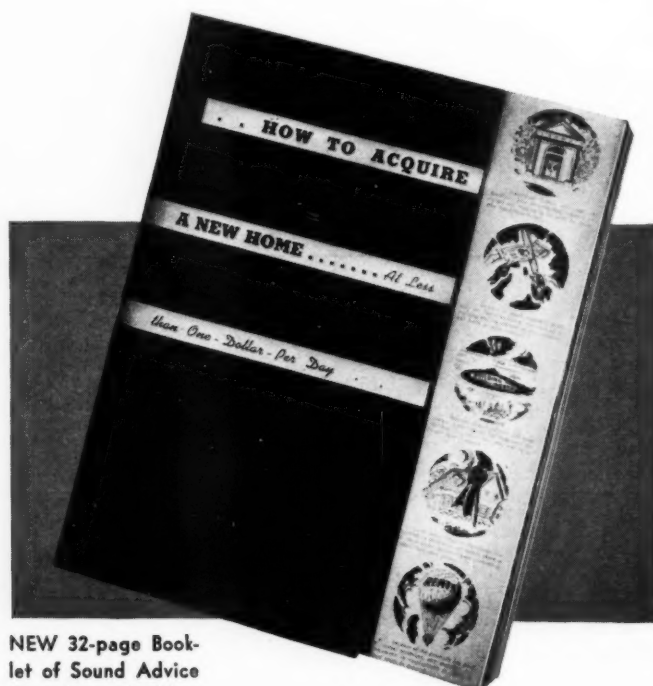
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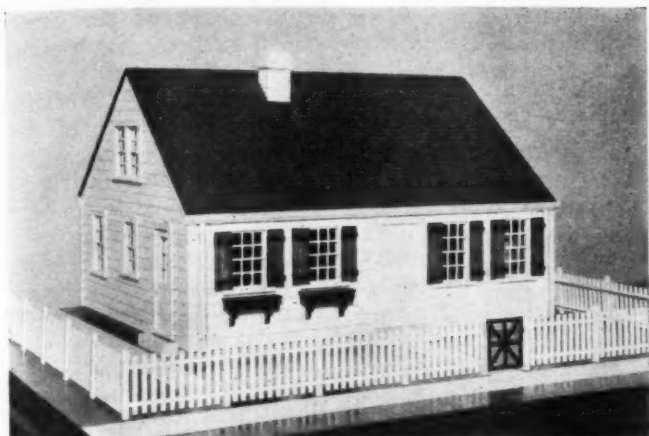
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NEW 32-page Book-
let of Sound Advice
for Home Builders



MINIATURE models are ready for sales office and window displays. This shows the 40-2 Design.

consumer demand is not our greatest problem. As a result of publicizing nationally the low-cost small home, consumer demand has manifested itself in no uncertain terms, but our problem has been and still is how can we satisfy this demand.

It does the building industry no good to talk small homes and low-cost homes to the prospective home owners, who almost jump down your throat when you show them the goods in the form of plans for a good well designed low-cost small home at a price they can afford, when we cannot deliver the houses at a price per month that the average American family can afford to pay.

The National Small Homes Demonstration, Inc.

The National Small Homes Demonstration, Inc., is a non-profit group, interested solely in making it possible for the families in the \$1,200 to \$2,500 annual income group to achieve home-ownership. The Chairman of its Executive Committee is Bernard L. Johnson, Editor of *American Builder*.

This activity has been sponsored jointly by the National Lumber Manufacturers Association and the National Retail Lumber Dealers Association, and it has had the cooperation of some thirty-two nationally prominent

manufacturers of building and materials equipment. It is an effort on the part of those engaged in the home-building industry to educate themselves as to the housing requirements of more than twenty million American families whose income dictates that housing for them shall not cost more than \$1.00 per day.

For three years this intra-building industry cooperative effort has sought through technical studies to bring about a general reduction in the cost of small homes. Nearly fifty original low-cost small homes have passed through its Technical Committee, and many of these designs have been built as low-cost exhibit homes in all sections of the United States. The plans which have been released have been intended to illustrate how with care it is possible to build today "More House for Your Money."

A Small Homes Sales Program for 1940

In 1940 the National Small Homes Demonstration is again making available to those individuals in the building industry who are interested in securing a greater volume of business through lower cost small home construction, ideas and materials that should be of first-rate assistance in enabling them to take advantage of this year's favorable sales circumstances.

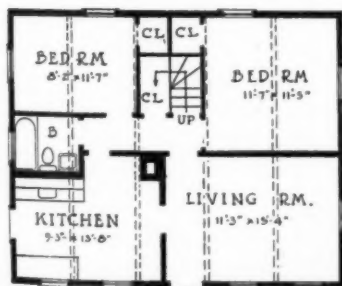
This program is to be released nationally through the headquarters office in Washington, D.C., and regionally through the newly formed State Homes Foundations, the backbone of which is the organized retail lumber distributing industry in many important trade areas.

The over-all objective of the 1940 Program is—

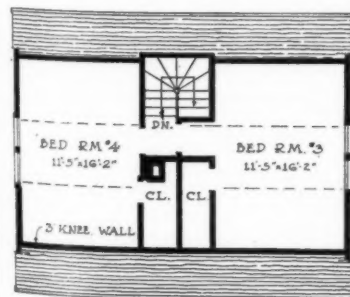
First: to stimulate the building of more low-cost small homes through a program of education of the builders of small homes as to the potential market, and the fundamentals of low-cost home construction.

Second: To focus the attention of the home-buying public on the ease with which a home may be acquired today, the values and conveniences built into the modern small home by an enlightened building industry, and stating the case for buying now.

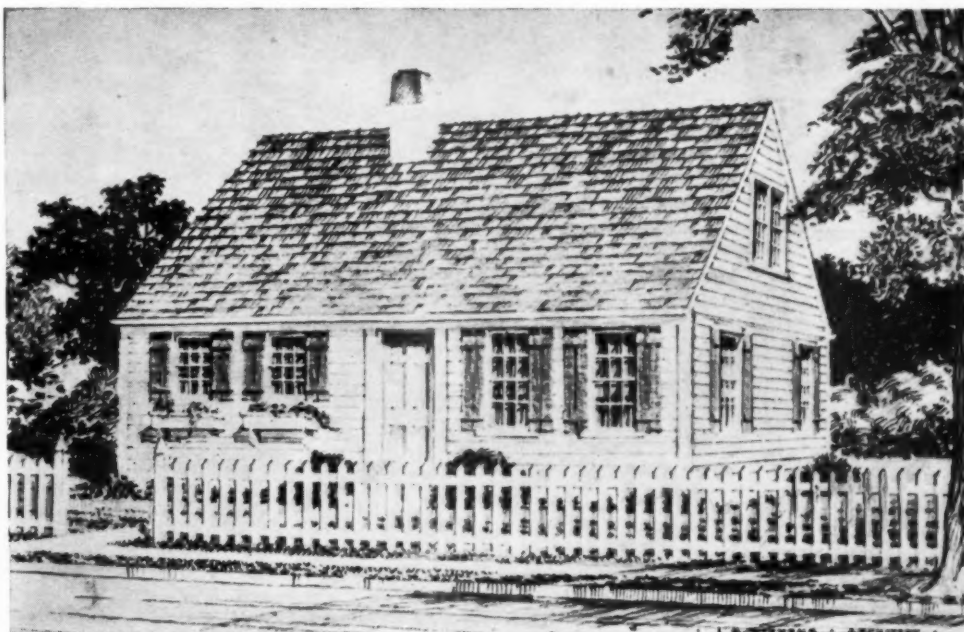
In our opinion the creating of a body of small home builders *who know how to build* a low-cost home is of equal importance to the job of creating so-called consumer demand. Without one the building industry cannot have the other.



FLOOR PLAN



SECOND FLOOR PLAN



DOLLAR-A-DAY home No. 40-2 of the 1940 Demonstration series.

Ready Written—In Mail Form
NEWSPAPER ADVERTISEMENTS
 To Help You Sell the Small Home Ideas in 1940

1940 May Be One of the Last Very Favorable Building Years

PRICES

HOW TO USE MATS

FOR LUMBER MERCHANTS

Can You Afford to Be a Day for Nothing?

JUST ONE HALF THE COST OF THE CHEAPEST SEDAN!

FOR LUMBER MERCHANTS

The two advertisements on home construction illustrated in this booklet are available in mail form to use in your local newspaper. The

SAMPLE Newspaper adv. (greatly reduced in size) are ready for local use.

The national program of small homes promotion has two essential phases:

First: That phase which has to do with practical research and technical study of the economics of standardization in design, materials and equipment in basic small homes plans; the study of methods and new developments which can be applied to small home construction, designed to lower costs at no sacrifice of quality. This type of study is fundamental to successful merchandising of any product. In this way we hope to have a campaign of *practical* interest to builders of small homes.

Second: Consists of a concentrated national promotional, publicity and merchandising campaign directed to the American family of low income, spread out to the grass roots through the State Homes Foundations.

No one industry has a direct financial interest of as much as 25 per cent in the construction cost of the average

small home. Lumber constitutes about 22 per cent; plumbing and its accessories about 12 per cent; heating about 8 per cent—so that no single industry can be made responsible for the over-all cost of a home. All of the industries whose materials go into the make-up of the modern small home have a responsibility in developing these new uses and methods of application of their materials and equipment, that will enable the dealer-builder to deliver a better small home at lower cost.

Through the National Small Homes Demonstration the lumber industry has in past years been studying better means for the application and utilization of its materials on the job, and in the past year has developed one idea which, as applied to small homes, is new. That is, the use of the joistless wood plank floor. The Technical Committee of the Small Homes Demonstration has been unanimous in its recommendation of this type of a floor system and it has proven in actual tests that it will effect a material saving of at least 14 per cent on the average house; will save on the average 26 per cent in installation labor time; and it has increased the insulation properties of the floor by about 25 per cent. This is one contribution toward better low-cost house construction.

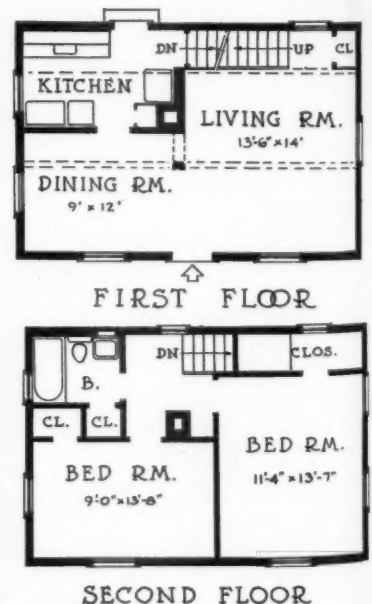
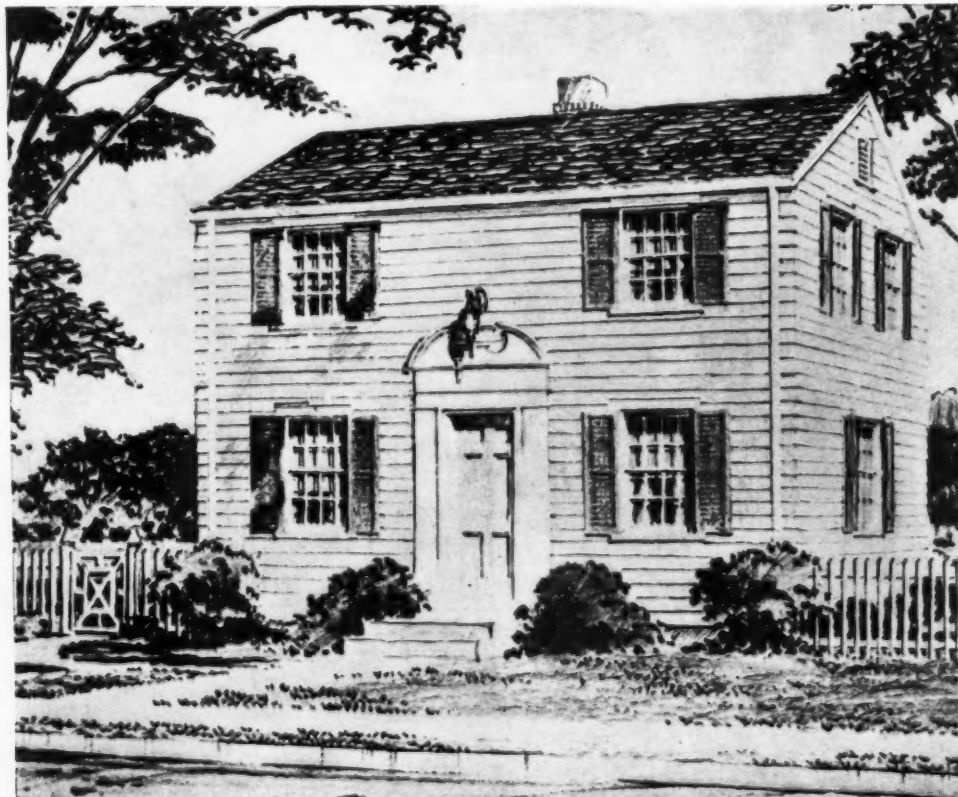
New Sales Tools

Following is a discussion of the various merchandising aids that will be furnished in 1940 to interested dealers and builders:

Low-cost House Designs: Two more engineered small homes designs. One is a story and a half design, 24' x 30', of from four to six rooms and bath. The second is a two-story design, of from 5 to 6 rooms and bath, 17'-6" x 26' in ground area.

These two small homes are being added to the list of twenty-four low-cost designs developed by the National Small Homes Demonstration in the past three years and we believe they are well planned, they will frame easily and rapidly, they call for standard lengths of lumber, they reduce job labor cost, and they are worth considering

(Continued to page 124)

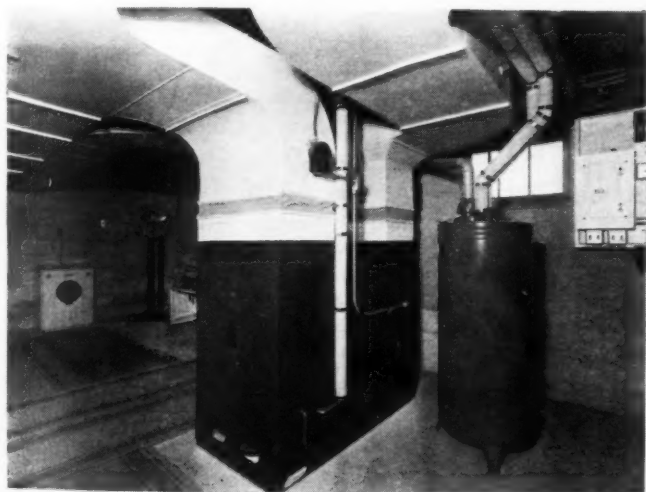


"ENGINEERED" Low Cost in this Two-Story Model, No. 40-1.

Double-Duty Gas Kitchen from Illinois

KITCHEN and dining nook are cleverly separated by counter in this kitchen submitted by T. C. Noonan of Chicago. Equipment includes a Universal gas range by Cribben & Sexton, an 8 cu. ft. Electrolux, and an Ilg kitchen ventilating fan.

NEAT, attractive and usable is the basement below from Elizabeth, N. J. Equipment includes a Bryant winter air conditioning unit and a Penfield High-Low, 30-gallon gas automatic water heater.



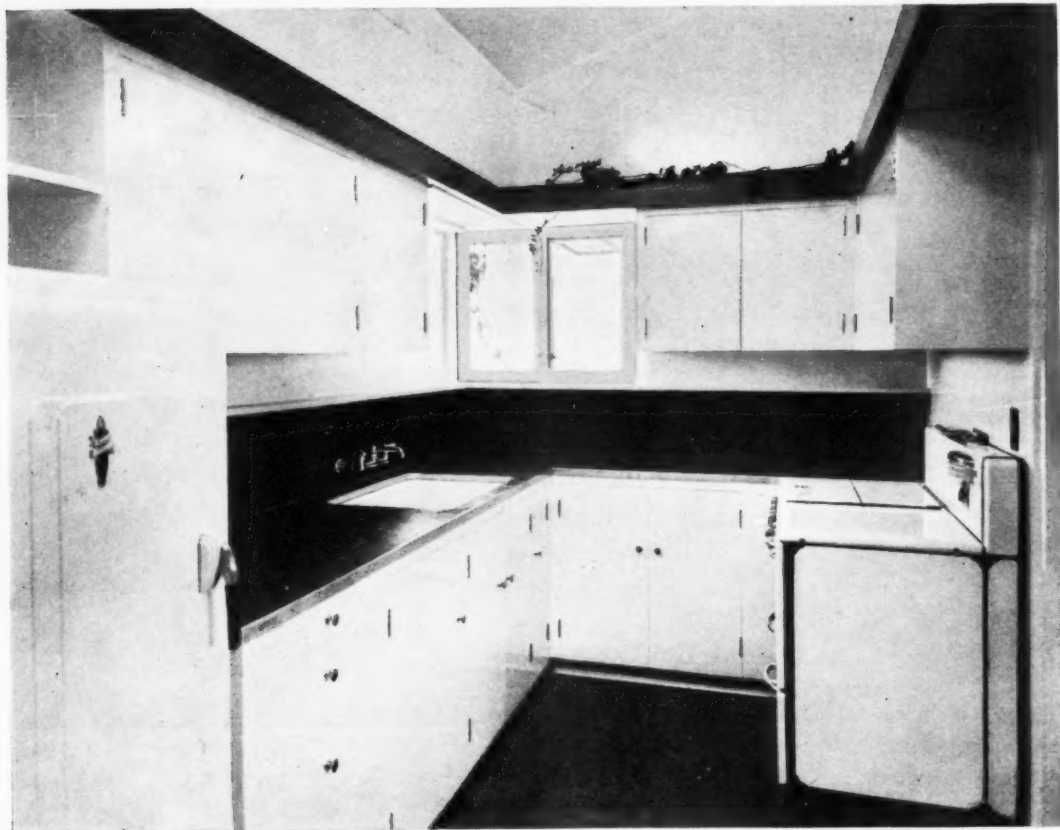
Sales-Tested Kitchens and Basements

Latest Technique in Gas Kitchen and Basement Planning as Revealed in Buyer-Approved Homes Entered in Nationwide Home Builders' Competition, Sponsored by American Gas Association

IT IS easy to theorize about what constitutes progress in the building industry, but difficult to demonstrate it. There is no theorizing about the unusual collection of photographs of recent installations of gas kitchen and basement equipment shown on this and following pages. These represent the practical, sales-tested work of residential contractors and operative builders from coast to coast. They are the work of builders performed within the last two years and considered good enough for entry in the recent nationwide Home Builders' Competition of the American Gas Association.

It is not often that it is possible to get a bird's-eye picture—nationwide in scope—of the current activities of builders. Study of these kitchens and basements reveals definite progress in the heart of the home—the kitchen and basement with their all-important provisions for heating, cooking, refrigeration and hot water equipment.

Selection of the fundamental kitchen and basement equipment for the modern home is an important responsibility that rests squarely on the contractor or operative builder, since he is the man who guarantees the house and is called upon to make good if it fails to satisfy. These equipment items, small in number, are of primary importance in determining the comfort, convenience and livability of the modern home. The gas industry and the manufacturers of gas appliances have placed at the builder's disposal, as these pictures graphically demonstrate, modern equipment that is thoroughly tested and reliable, is economical of first cost and economical to maintain. Home builders from many states in various parts of the nation, whose work is illustrated in this section, are to be congratulated on the character and caliber of the home comforts they have provided for their customers, the American home buying public.



Modern Gas Kitchen by California Builder

JOSEPH J. FOX of Los Angeles designed and built this efficient, modern gas kitchen with its steel cabinets, indirect lighting, large, easy-to-clean work areas. The range is a Certified Performance Magic Chef, and the gas refrigerator an Electrolux.

U-Shaped Plan Is Popular

A GROWING number of builders are adopting the efficient U-shaped kitchen plan, entries in the A. G. A. Builders' Competition indicate. Study of the kitchens on this and the opposite page show care used in selecting the cooking, refrigeration and other equipment and skill in arrangement. There is ample work and storage space; sinks, refrigerators and ranges are placed in scientific relation to each other in a way that eliminates waste motions.



New York Builder Features CP Range

WEBSTER & WEBSTER, Binghamton, N. Y., builders, entered this colorful U-shaped kitchen in the Gas Competition. The equipment featured includes a CP Garland range, Servel refrigerator, Stanley kitchen hardware, Congoleum-Nairn linoleum with colorful inlaid border. The cabinets provide ample storage and work space, and the kitchen is one that is easy to work in.

Texas Kitchen with Ample Work Area

SPACIOUS, and well equipped is this kitchen by W. L. Bradshaw, builder of Lubbock, Texas. The kitchen cabinets are of steel, with one-piece metal-bound linoleum tops by Elgin Stove and Oven Works. Congoleum-Nairn linoleum floors are attractively coved. Gas equipment includes a Norge insulated range, Electrolux refrigerator.



BOTH of the well equipped kitchens on this page were designed and laid out by builders who took the time to study the recent developments in kitchen planning and took the pains to put them meticulously into effect. It is the builder who guarantees the house and is called upon to stand by that guarantee for many years. The kitchens shown on this page were laid out and equipped to provide lasting satisfaction and make enthusiastic customers.

Builder Writes the Ticket

Designed and Built by W. G. Farrington

A SERVICEABLE and spacious kitchen was produced by W. G. Farrington, operative builder of Houston, Texas, who designed and built the house. The gas stove is a Certified Performance (CP) Roper range, equipped with electric light, clock and timer, Thermal Eye oven control, simmer burners. Kitchen cabinets are by Whitehead Metal Products Corporation.





Luxury Entry from Westchester County, N. Y.

THIS luxury kitchen is an important feature of a \$40,000 house in Bronxville, N. Y., designed by John D. Tuttle. The extensive kitchen cabinets are by Janes & Kirtland, with an Elkay metal sink. The refrigerator is the largest size Servel Electrolux, with double doors. Gas range is a Chambers de luxe insulated model.

New Kitchens Set Modernization Pace

MODEL homes built, equipped and opened to the public by speculative builders have a far-reaching effect on the entire community. The builder who goes his competitor one better and sets a higher standard of layout, planning and kitchen equipment raises the level of the entire community. The average individual usually visits several new homes before either buying or modernizing.

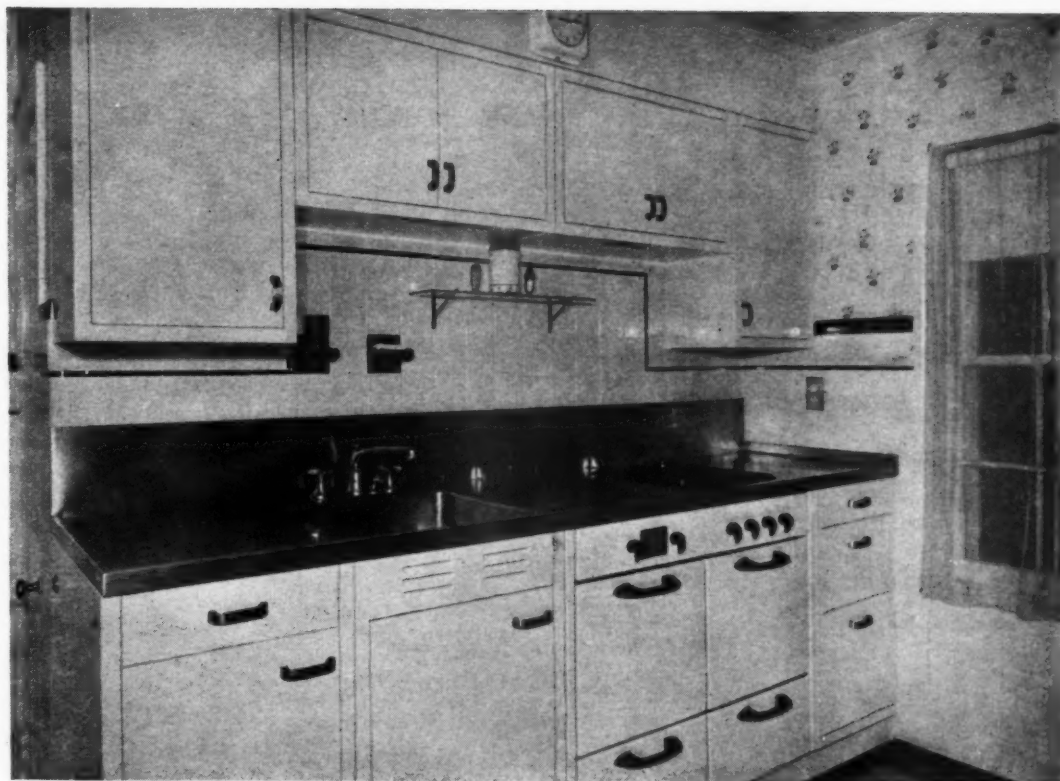


Streamlined Kitchen with Electric Dishwasher

A. F. MYERS of Hanna City, Ill., built this streamlined kitchen, with its metal cabinets and work areas, Lumiline lights and generally modern and up-to-date air, at Peoria, Ill. It is equipped with a General Electric dishwasher and garbage Disposall, Whitehead steel cabinets with Monel tops, Chambers gas range, Servel refrigerator.

One-Piece Top with Built- in Sink and Range

HERMAN L. SCHINDLER, Bound Brook, N. J. builder, selected quality products. Of unusual interest is the Duocrat built-in sink and range combination. Equipment includes a Magic Chef gas range, Whitehead Metal Products Co. cabinets and Duocrat unit, Congoleum-Nairn linoleum, Ilg fan, Richard Thibaut wallpaper.



ANALYSIS of the modern gas kitchens submitted by builders from all parts of the country shows a definite trend towards the use of more factory-built, or prefabricated equipment. Practically all have factory-built cabinets which require a minimum of time for installation. An important factor in built-in equipment is that it is eligible for long-term financing under the FHA insured mortgage.

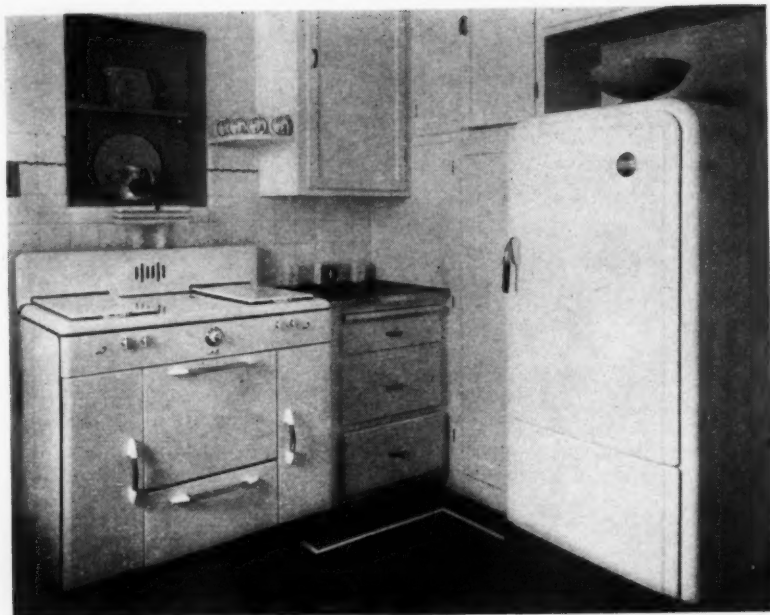
Trend is Toward More Built-in Equipment

From Rochester, CP Range, Ample Cabinets, Effective Plan

MANN & CHRISTIAN, builders, of Rochester, N. Y., designed and constructed this kitchen with a slightly flamboyant touch that gives it a cheerful, appealing air to many people. It is equipped with a Marlborough range by Cribben & Sexton Co., Electrolux refrigerator, Victor electric fan, ample cabinets, storage space and counter space.



Builders Set High



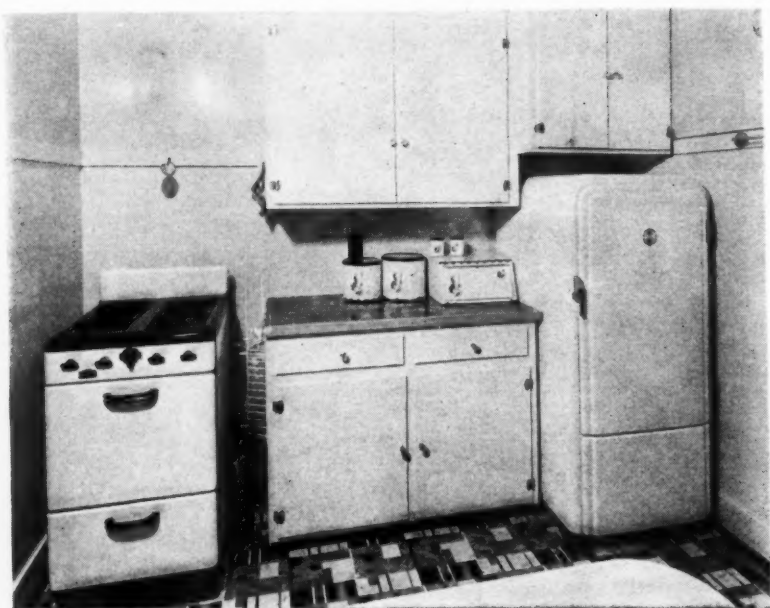
Built by R. W. Bramberg

IN LINE with the quality construction he has long maintained, Builder Bramberg equipped the kitchen of this model home in Oak Park, Ill., with an A-B divided top gas range, with light and automatic timer, by the A-B Stove Co. The refrigerator is a large-size Electrolux. In accordance with engineering instructions, a 1-foot space is left between refrigerator top and cabinets.



Gas Kitchen from Muskegon

LOCATED in the Garber Subdivision of North Muskegon, Mich., this house was built for a local doctor from plans by B. J. DeVries and W. T. Anicka. Hot water is provided by a Penfield 40-gal. copper water heater. The gas range is a Roper equipped with automatic time clock. The refrigerator is an 8 cu. ft. capacity Electrolux.



Built by A. G. Rapp

KITCHEN is located in a 2-family house designed, built and owned by A. G. Rapp, contractor and builder of Peoria, Ill. Builder Rapp equipped his house with a Tappan No. 8 gas range with insulated oven, broiler and thermostatic oven control. Hot water for both families is provided by a Sandy-Mac Everhot made by the Everhot Heater Co. The refrigerator is an Electrolux.

Kitchen Standards

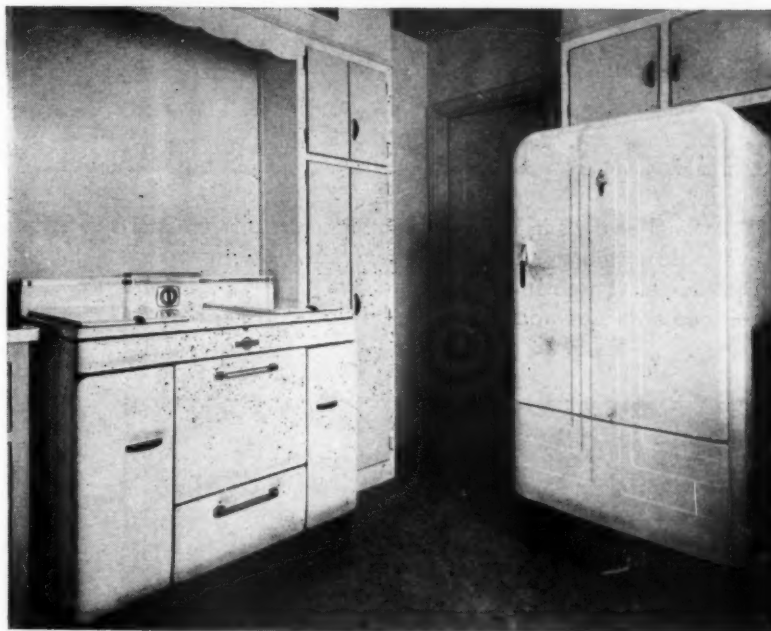
Old Colony Ridge Kitchen

THE HOME in which this kitchen is placed was built recently in the thriving Old Colony Ridge subdivision of Hartsdale, N. Y., by Wintour Hackett, from plans by Benson Eschenbach. The kitchen is trim and well laid out. Equipment includes steel cabinets by Elgin Stove and Oven Co., Armstrong linoleum with inlaid color borders, a De Luxe Estate gas range.



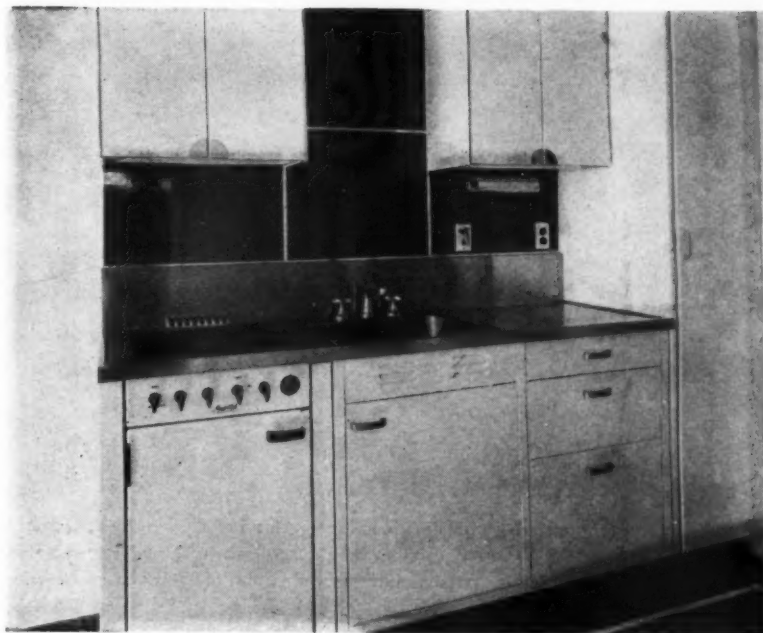
Harold Van Buskirk, Builder

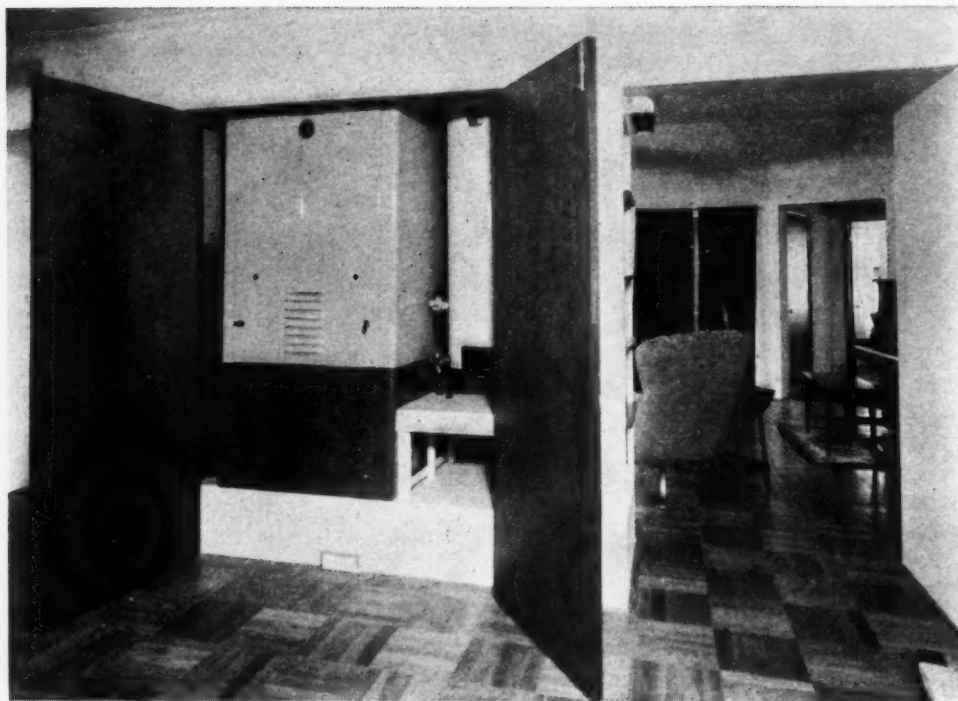
HAROLD VAN BUSKIRK of Bronxville, N. Y., a quality home builder with a reputation for good work, built the house featuring this kitchen and entered it in the A. G. A. Home Builders' Competition. Kitchen is executed in attractive colors and equipped for serving a large family. The gas range is a divided top, 4-burner Crosley with automatic timing device, heavily insulated oven and ample storage for pots.



Combination Range-Sink Unit

JOHN SENESE, general contractor of Grosse Pointe, Mich., equipped this Competition kitchen with one of the new sink, range and cabinet combinations. This unit, manufactured by the Whitehead Metal Products Co., has a Monel metal top extending over the Magic Chef built-in gas range, as well as forming the sink and backsplash. The metal cabinets above are made by General Electric. Blue-colored Marlite covers the wall between splashboard and cabinets.





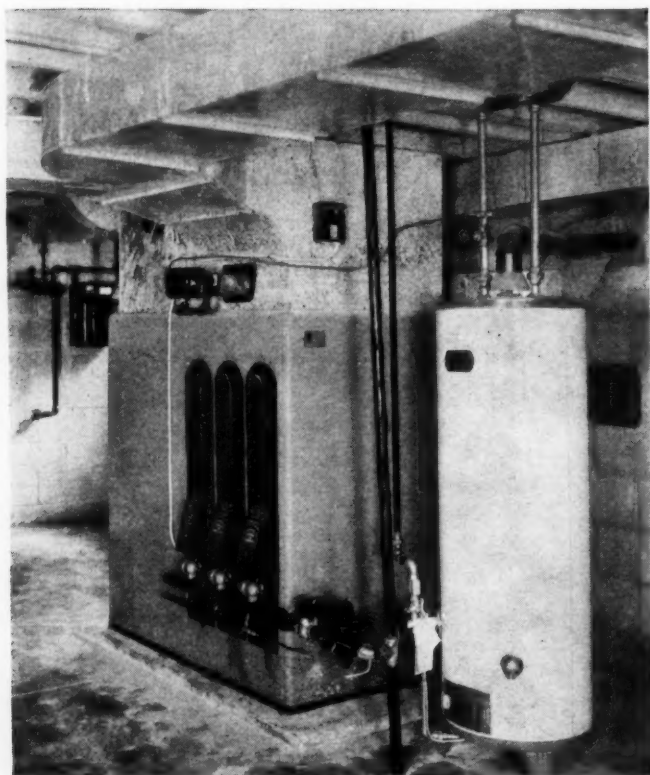
Basement Brought Upstairs

W. L. BRADSHAW, architect and builder of Lubbock, Texas, brought the basement upstairs in this house, placing the heating and hot water units in this attractive closet in center of house. The equipment is a Lennox Aire-Flo winter air conditioning unit and a 30-gal. De Luxe General water heater. Heater is easily serviced from front.

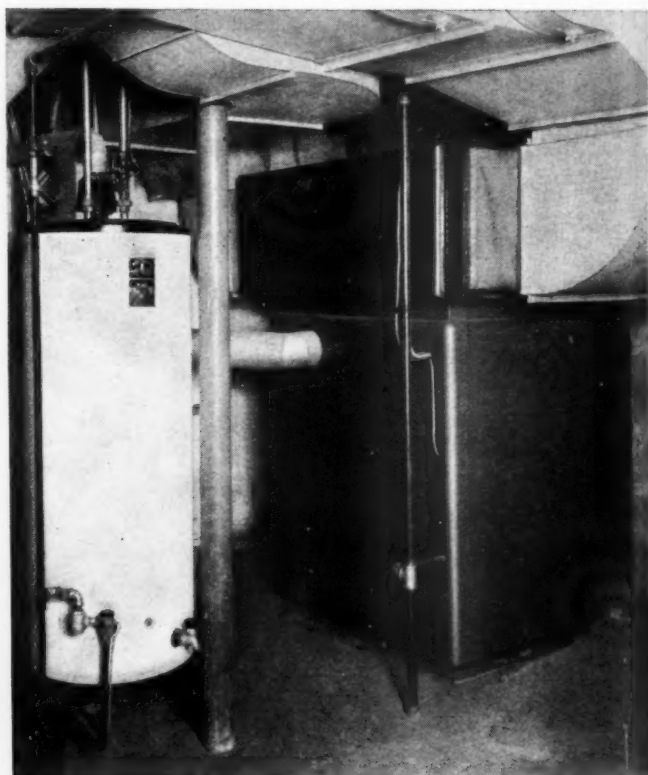
Tested Equipment Backs Builder's Guarantee

IN the final analysis it is the residential contractor or operative builder who guarantees the satisfactory performance of a home. Basements illustrated on these pages are equipped with gas appliances tested and certified by the

A. G. A. testing laboratories, and bear their seal of approval. They are equipped with safety devices, tamper-proof regulators and automatic controls that assure satisfaction to both the home owner and the builder.



AMPLE ducts carry air with minimum friction in this installation by Builder R. D. Hayden, Webster Groves, Mo. Equipment: Mueller gas furnace E P 3, and "Ambassador" model water heater by Lawson Heater Co.



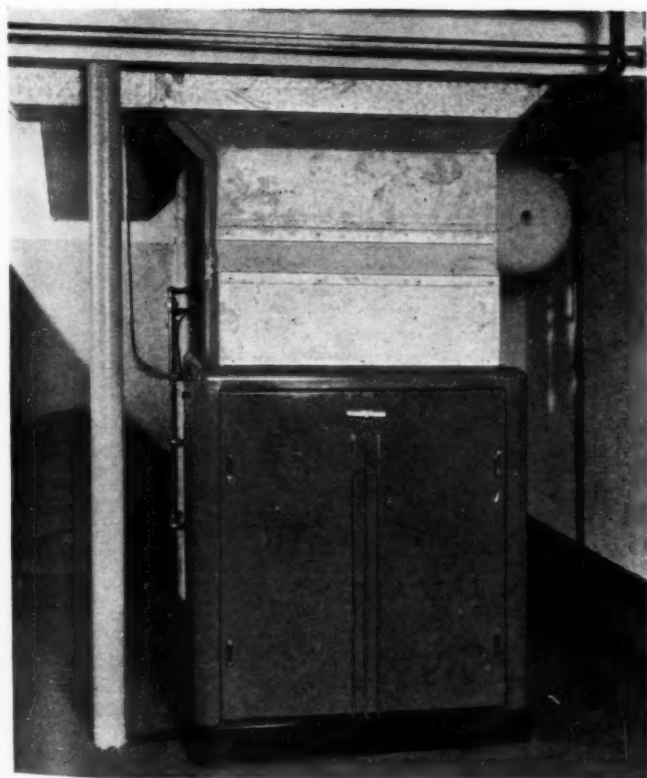
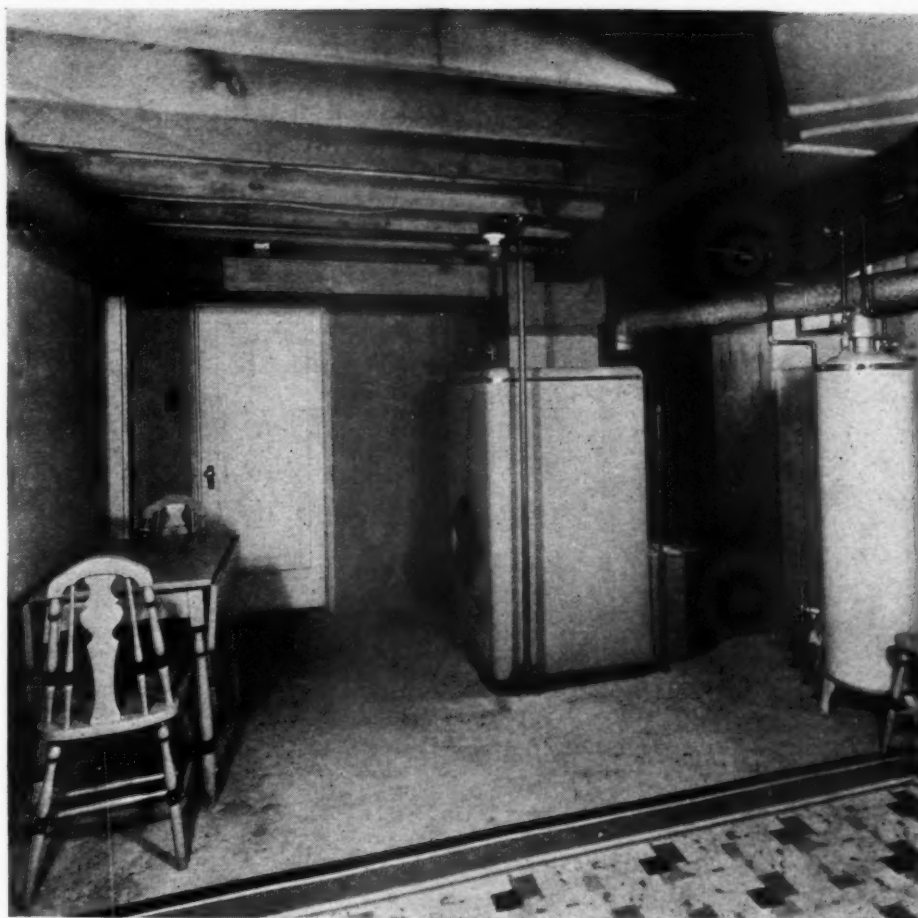
DUCT sound barrier in foreground reduces air circulation noises in this North Haven, Conn., home built by Y. H. and V. F. Larsen. American Radiator & Standard Sanitary winter air conditioner, Whitehead automatic storage water heater with Monel metal tank.

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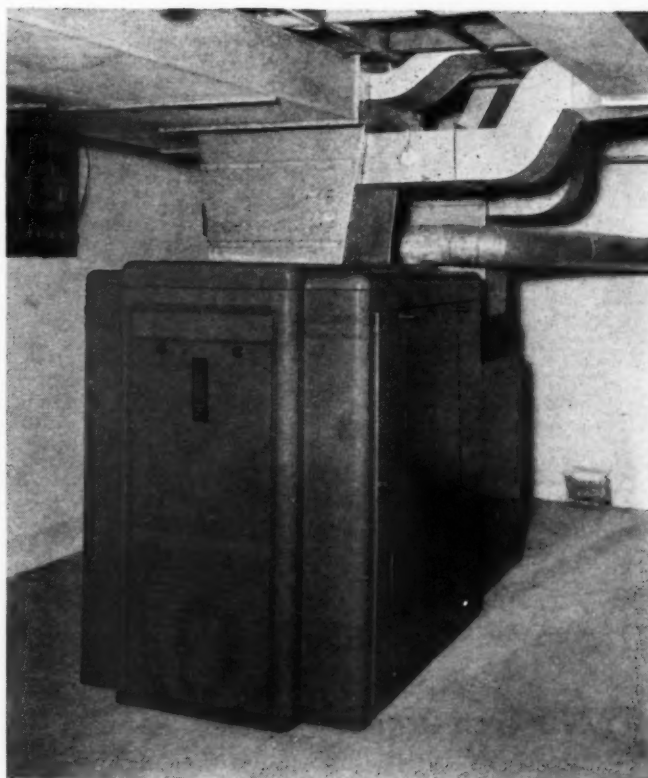
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Clean, Compact— Controls Inside

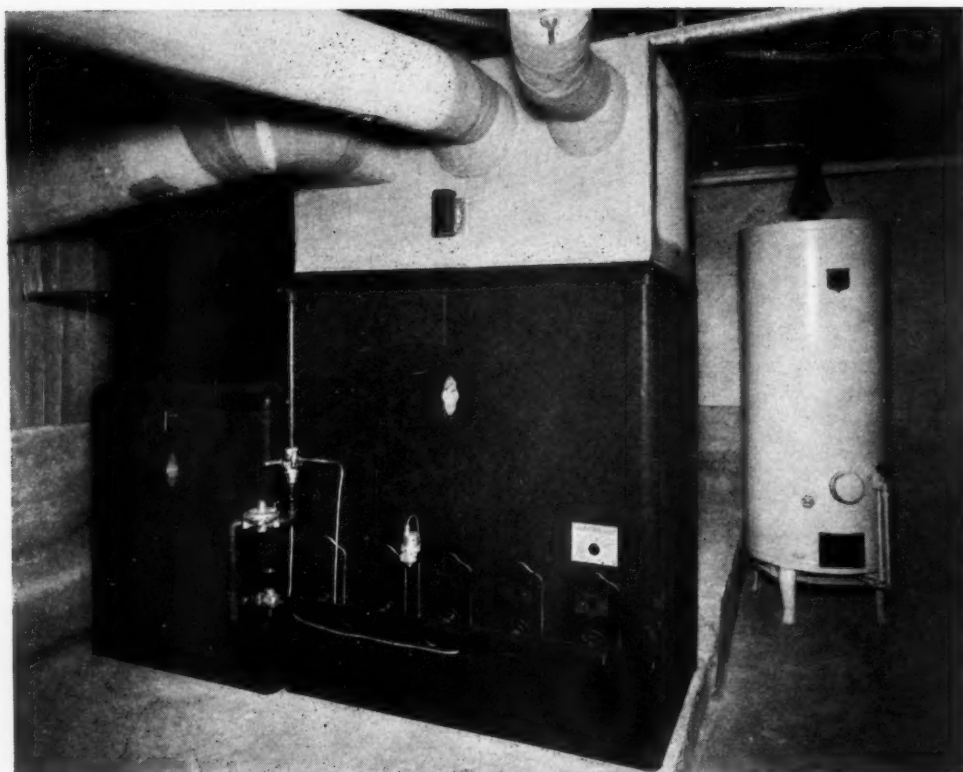
EQUIPMENT side of an attractive basement recreation room. Ducts are ample and set up out of the way. House located on Vestal Road, Vestal, N. Y., and submitted by Willard J. Raif, local contractor. Heating unit is Niagara No. 220 by The Forest City Foundries Co. Water heater is Ruud De Soto automatic storage unit.



CARL D. HALL & SON, Arlington, Mass., builders, selected this General Electric air conditioning gas furnace. The water heating appliance is installed inside the furnace casing, with a 50-gal. capacity storage tank placed at ceiling.



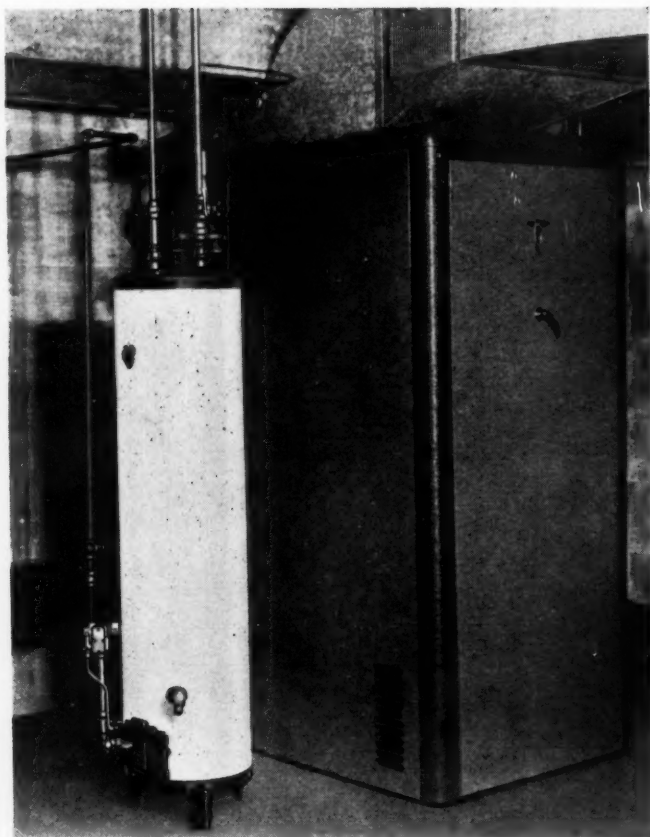
MODERN gas heating unit is easily accessible, yet, thanks to forced air circulation, is placed out of the way in a corner of the basement. Sunbeam gas winter air conditioner by American Radiator & Standard Sanitary Corp.



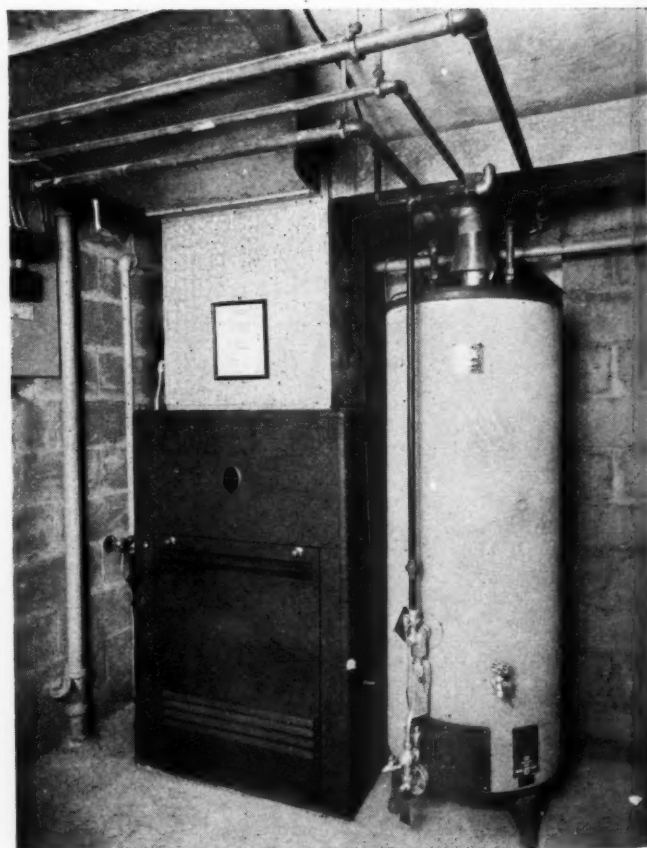
California Builder Uses Two Furnaces

W. F. WYATT, Santa Monica, Calif., building contractor, installed 2 Payne furnaces, as pictured at left, in his entry in the A. G. A. Competition. These are made by the Payne Furnace & Supply Co. of Beverly Hills. Hot water is supplied by a Majestic gas automatic storage unit of 30-gals. by Bastian Water Heater Co.

Home Building Contest Entries Show Quality Equipment



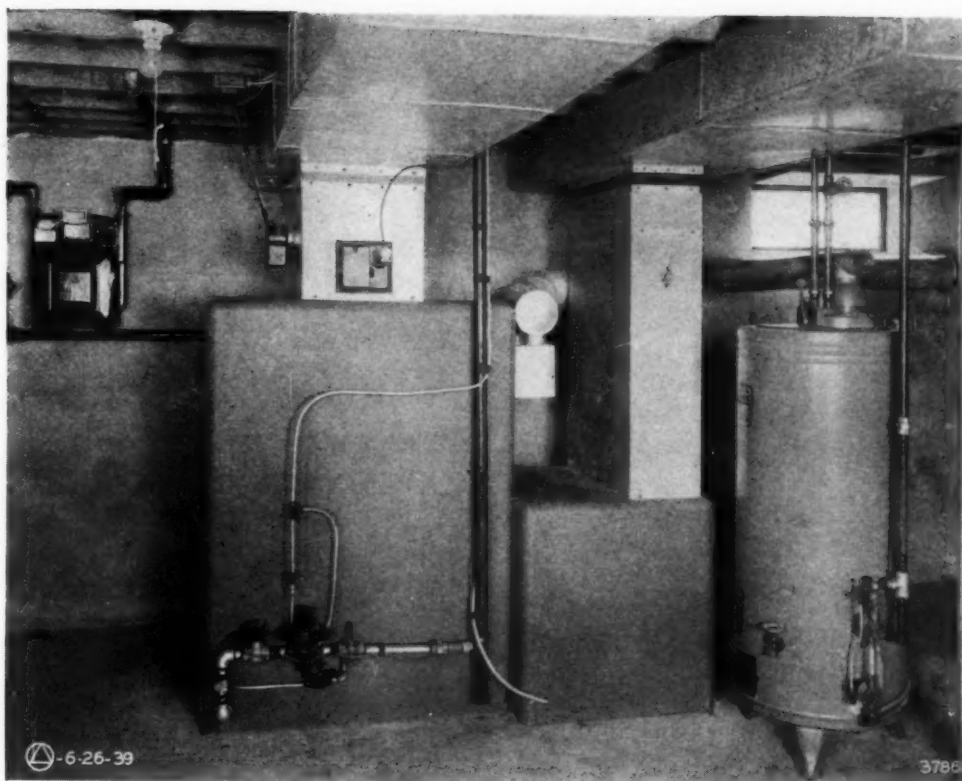
COMPACT heating installation in home in Cuyahoga Falls, Ohio, built by Aubrey Billmon and Charles Coolman. Janitrol forced warm air unit, Surface Combustion Corp.; American automatic storage water heater, Hotstream Heater Co., Cleveland.



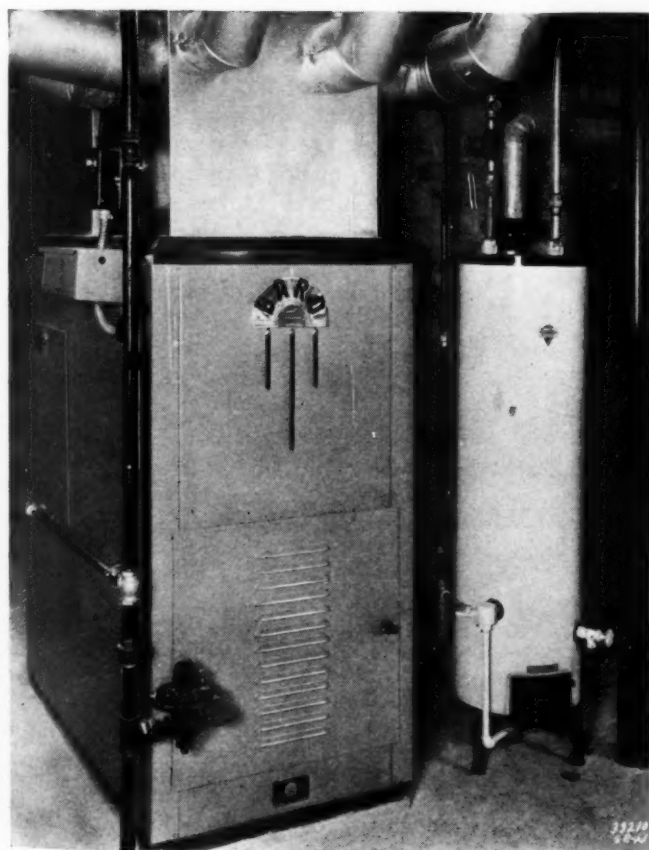
EQUIPMENT in this Westchester County, N. Y., house, built by Harold Van Buskirk, is located in a corner out of the way. Bryant gas-fired winter air conditioner; Rex 50-gal. automatic storage water heater by Cleveland Heater Co.

New Jersey Installation with Winter Conditioner

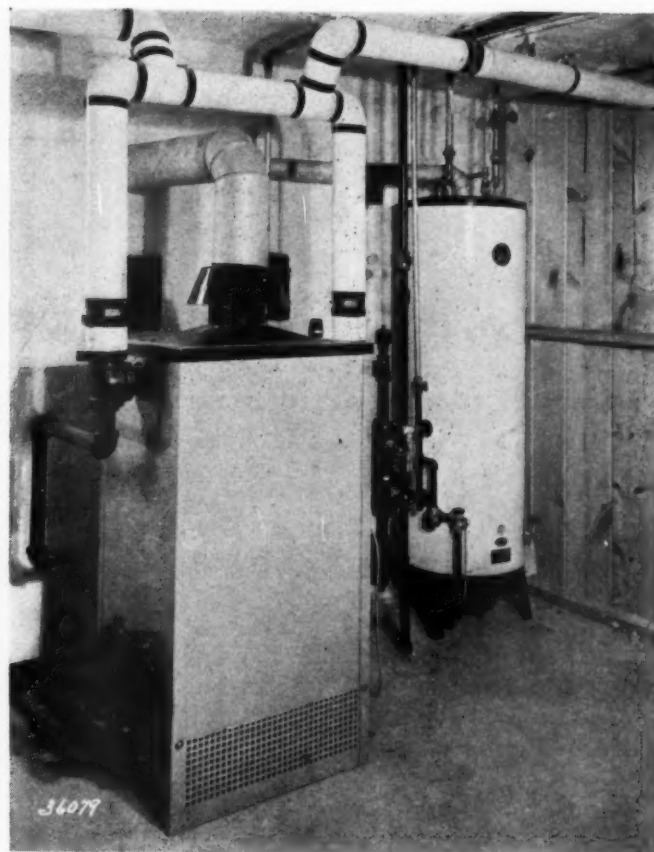
TRIM, efficient Competition entry by G. M. Schwartz of Middlesex, N. J. Provides an even flow of tempered, humidified air in all parts of the house. Equipment consists of a Sunbeam winter air conditioning unit by American Radiator & Standard Sanitary Corp., and a Penfield High-Low 30-gal. Automatic storage heater by John Wood Mfg. Co.



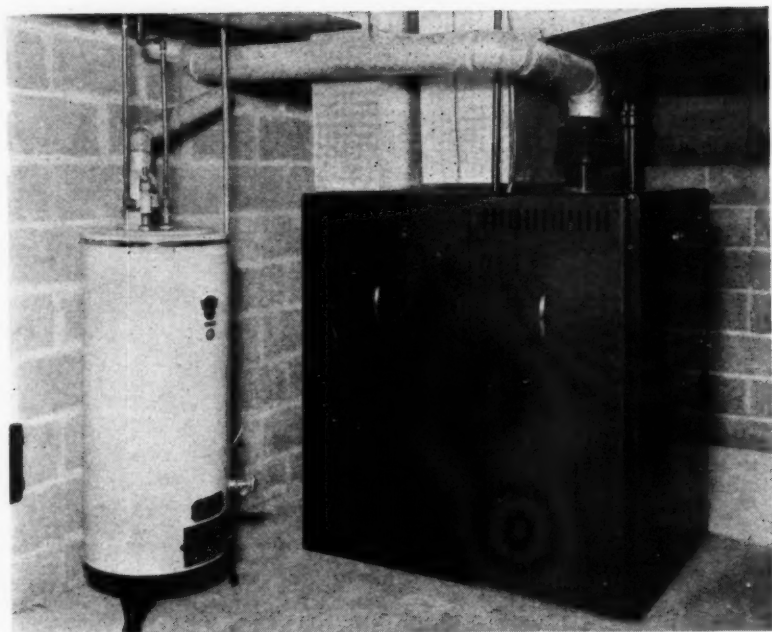
Equipment Installed by Active Builders in Many States



HARRY DURBIN, prominent Detroit operative builder, selected this system, with aluminum-painted circular ducts leading into a large plenum chamber. Air conditioning unit by Bard Mfg. Co. Water heater is an Everhot Sandy Mac, No. 20, by Everhot Heater Co.



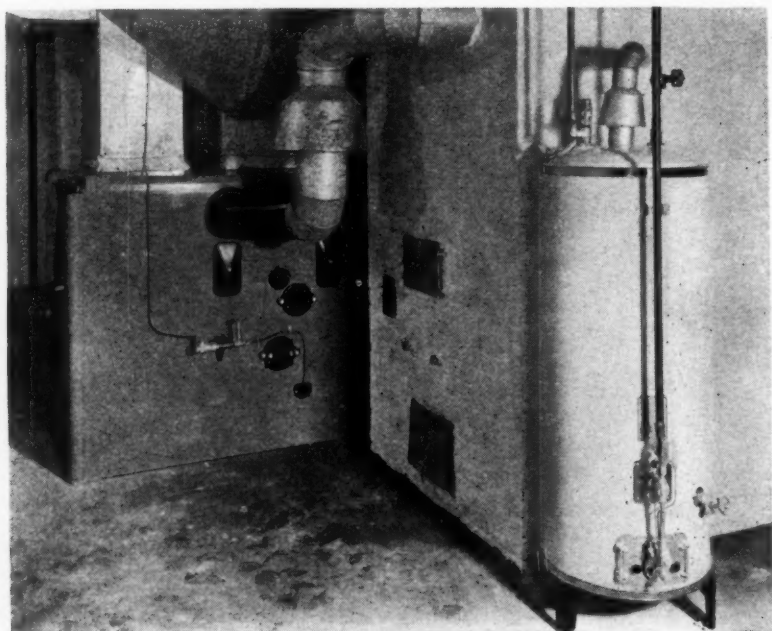
WELL INSULATED steam system installed by Sterlingshire, Inc., Long Island operative builders. American Radiator & Standard Sanitary Standard Ideal steam boiler; Whitehead Monel metal water heater is seen at the right.



Low First Cost— Low Upkeep

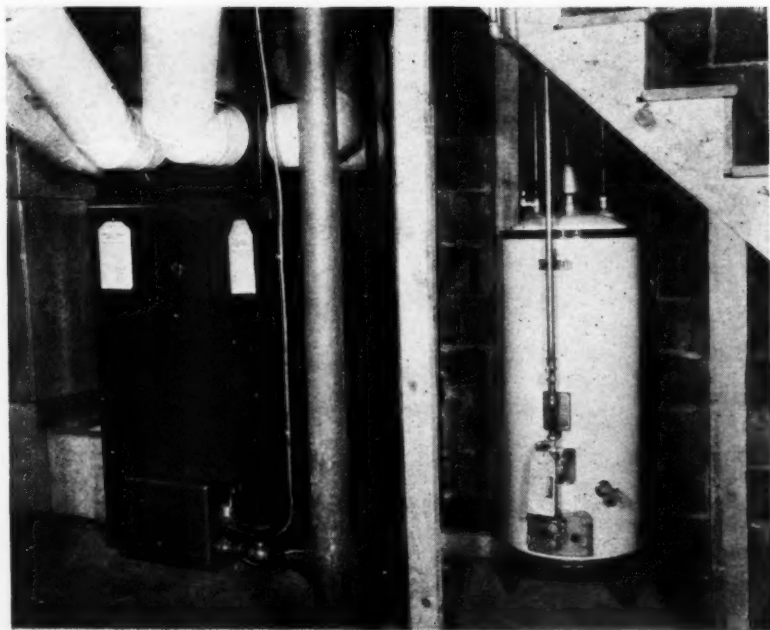
Toschrist Builders, Inc.

THIS well known Rochester, N. Y., home building organization picked the compact gas-fired job at left, which has all controls fully enclosed and provides humidified, evenly distributed air throughout the house. Heating unit is a Richmond gas heater by Richmond Radiator Co. Water heater is a Penfield copper tank unit heavily insulated, made by John Wood Mfg. Co.



Tempered, Humidified Air

FROM Albany, N. Y., was submitted the heating and hot water installation at left in a home built by the Buchman Albany Corp. The gas-fired heating unit distributes mild currents of tempered, filtered and humidified air throughout the house. The heating unit is a gas-fired Delco winter air conditioning unit, made by Delco Appliance Division of General Motors Corp. Water heater is a Ruud & Monel, No. 1230 insulated automatic storage heater with temperature relief valve at top.



Efficient Gravity-Type Unit

BUILDER Louis R. Ruthven of Binghamton, N. Y., selected the gravity-type gas furnace shown at left, which has a neat and efficient arrangement of circular insulated ducts. The equipment is installed in an out-of-the-way corner. The heating unit is a type S.G. 36-14 E gravity gas furnace by American Radiator Corp. Water heater is a Ruud & Monel, No. 1220, automatic gas storage type with Monel metal tank.

More Space for Recreation

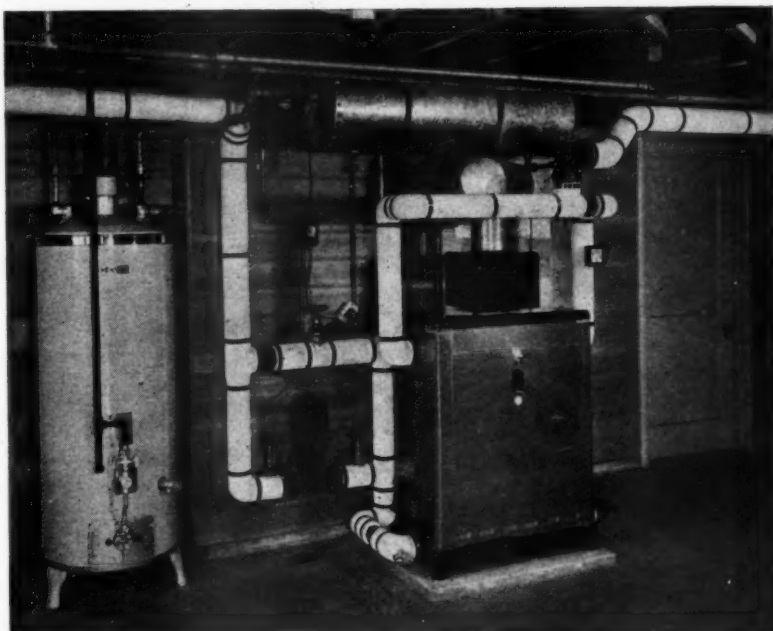
Mickey Mouse at Home Here

T. B. WINSHIP of Portland, Ore., designed and built this house, with its recreation room decorated with Mickey Mouse houses. The clean, trim heating unit in the foreground makes such a recreation room possible. Heating unit is a Kleenair gas air conditioning furnace, No. 12, by the Kleenair Furnace Co.



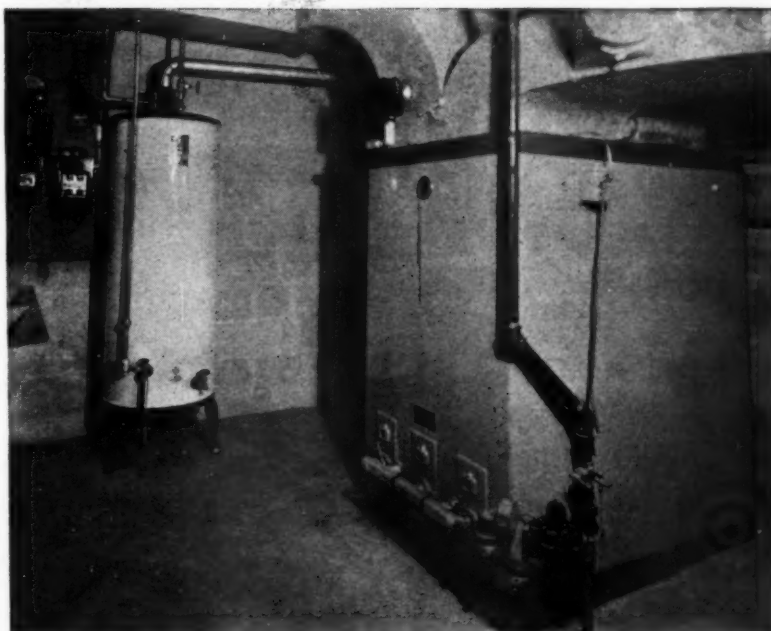
Two-Pipe Forced Hot Water

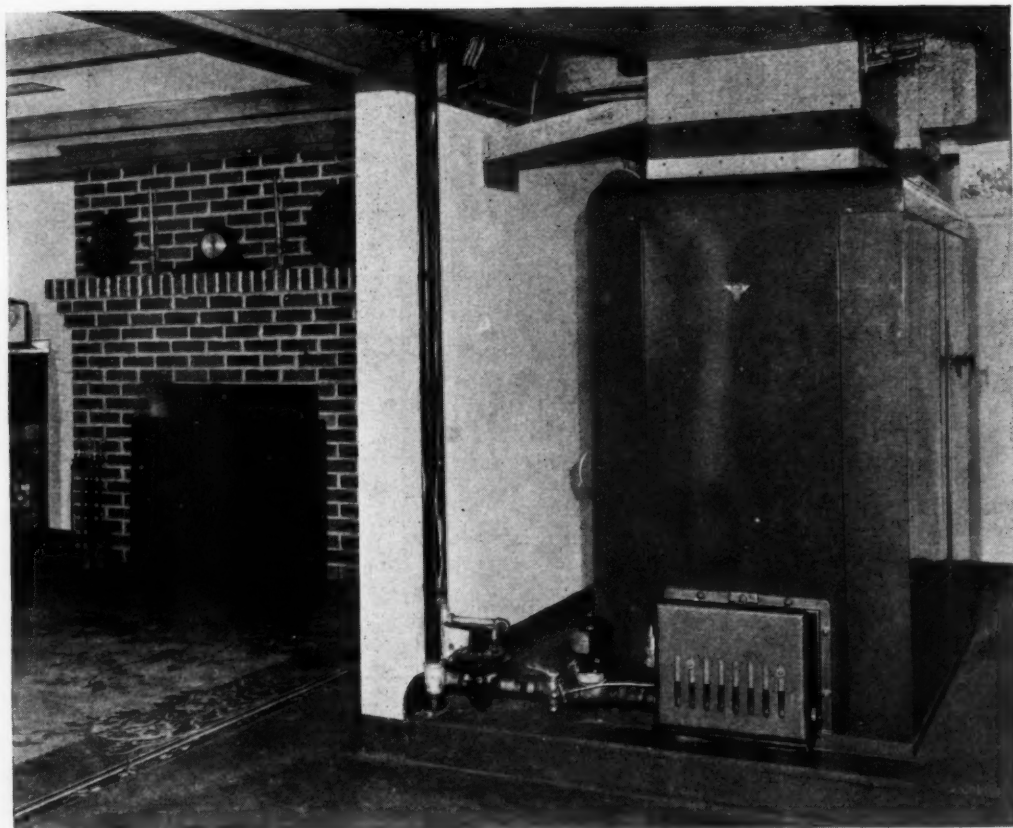
A WELL insulated hot water heating system with forced circulation, pressure equalizing tank and draft diverter, as installed in a Portland, Ore., home built by F. L. Boles & Sons, contractors. Valve arrangement permits gravity circulation in case of failure of pump circulator. Heating unit is a Basmor hot water unit by Bastian-Morley Co. Water heater is a 30-gal. Ruud De Soto, insulated, automatic.



Built by Milmac, Syracuse

LOCATED in Syracuse, N. Y., this house, built by Milmac, Inc., from plans by Paul Hueber, architect, provides efficient automatic gas heating with low initial cost and low operating cost. Air is heated, humidified, filtered and forced to desired locations in the house. The heating unit is a Lennox Aire-Flo winter air conditioning unit by Lennox Furnace Co. Water heater is a Whitehead automatic gas storage unit with Monel, heavily insulated metal tank.

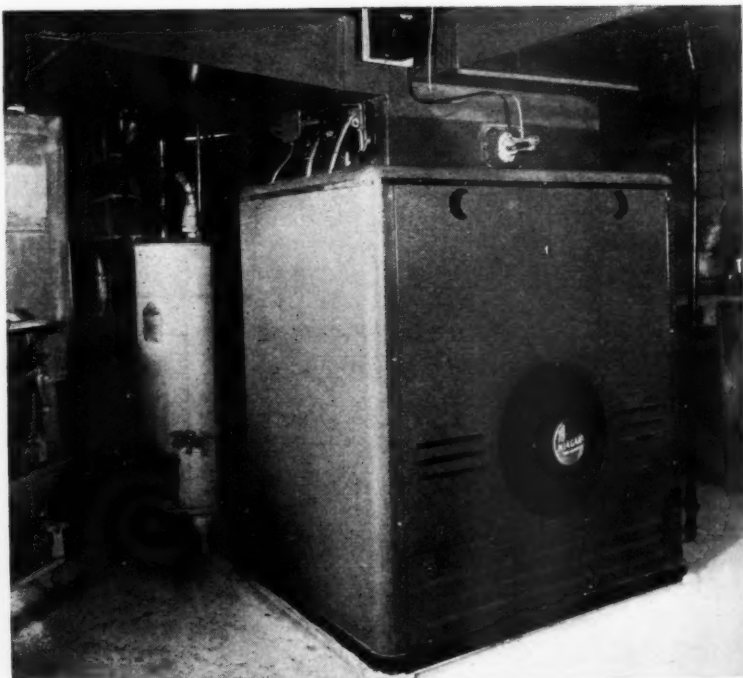
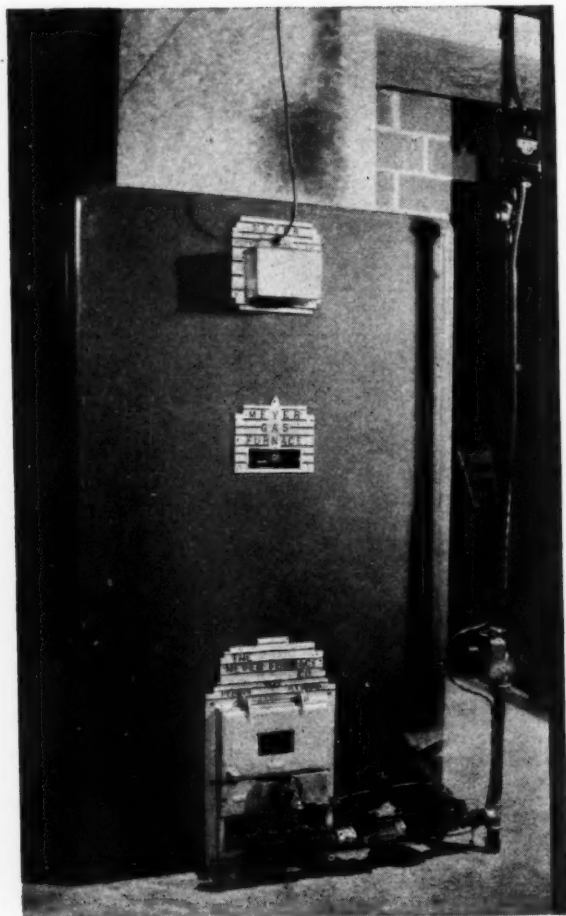




**Selected by
Bound Brook,
N. J., Builder**

BUILDER H. L. Schindeler of Bound Brook, N. J., placed this compact heating unit in an alcove off the recreation room, which has an attractive fireplace and is fixed up for pleasant, year-round use. Equipment is a type 12-KS, winter air conditioning unit by American Radiator & Standard Sanitary.

Gas Furnace in Alcove off Recreation Room

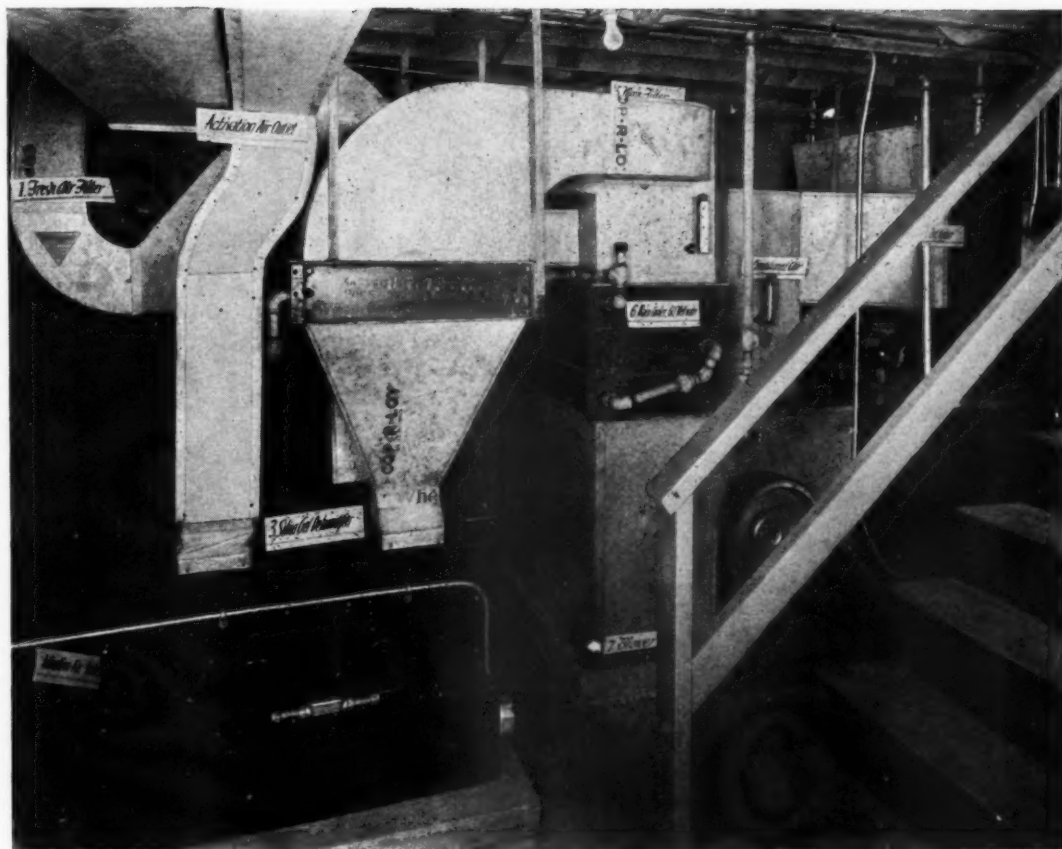


EFFICIENT, gas-fired system in home built by W. S. Lawson, contractor of Binghamton, N. Y. Niagara air conditioning unit by Forest City Foundries Co. Water heater is an F-6, 20-gal. automatic insulated unit by Sands Mfg. Co.

AT LEFT is shown heating installation in house at Schuyler, Nebr., built by Ed Varycka, contractor and builder of that city. The heating unit is a Meyer gas furnace, manufactured by the Meyer Furnace Co.

Complete Summer— Winter Air Conditioning

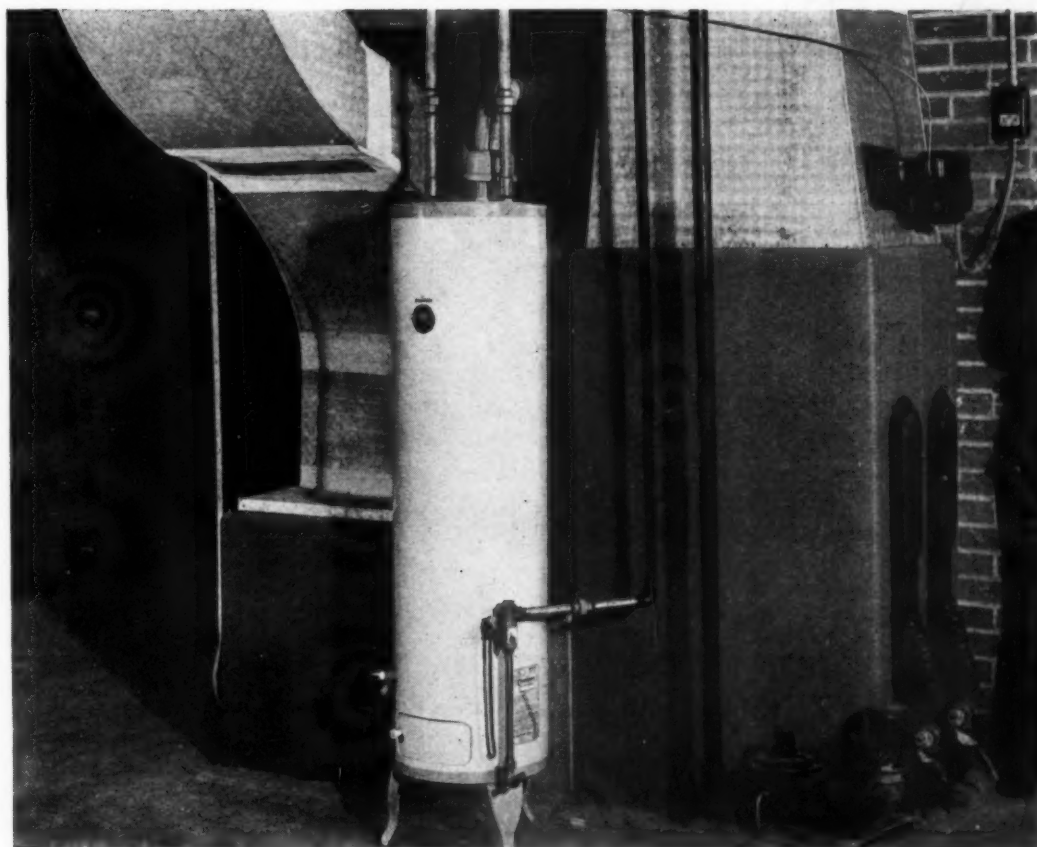
FARMER & DURAN, prominent operative builders of Tulsa, Okla., built the house in which this complete year-round system is located. Equipment consists of a Bryant Silica-Gel dehumidifier with a Bryant double-duct heater used in conjunction with Saraco blower, McQuay cooling coils, Libbey-Owens-Ford filters and Minneapolis-Honeywell controls. Cooling supplied by well water with 2 Burks rotary type pumps.

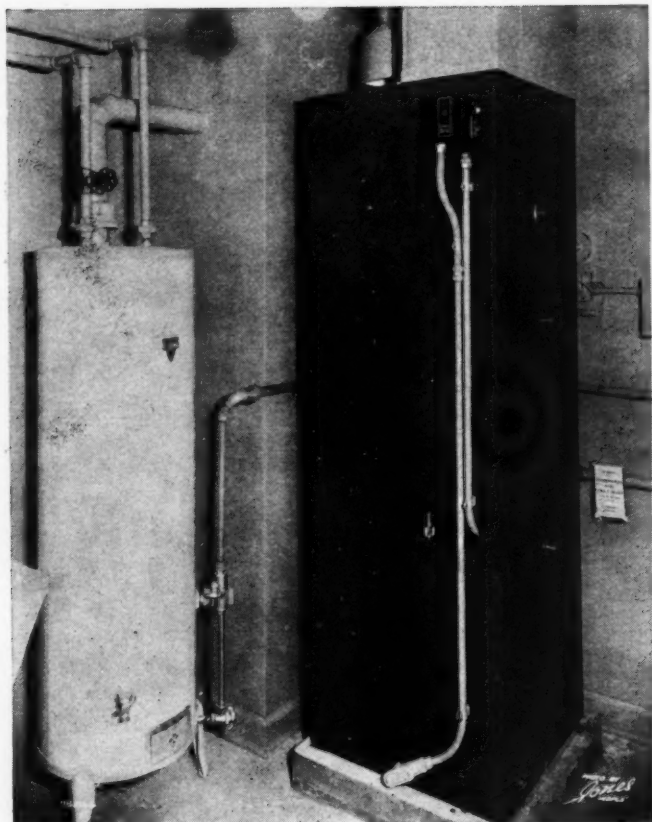


Maintains Controlled Temperature the Year Round

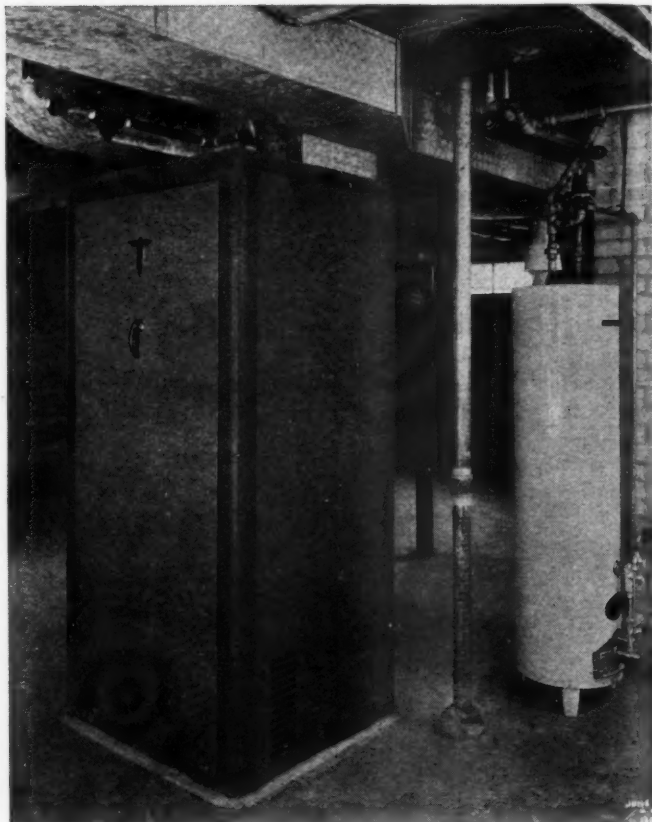
Built by Preston Werbel Evansville, Ind.

FROM Evansville, Ind., comes this installation in a home built by Contractor Preston Werbel. Blower and filter unit are separate from the gas furnace. Both round and square ducts are used. Heating: Mueller E-2-S air conditioning unit, by L. J. Mueller Furnace Co. Hot Water: Crane 20-gal. Champion automatic storage water heater.





EXTREMELY compact type of house and water heating equipment, taking a minimum of floor space. Bryant gas-fired winter air conditioner. Hot water: Crane 30-gal. Champion automatic insulated storage heater. R. E. Ratliff, designer and builder, Indianapolis.



VERTICAL type gas-fired unit in home built by Frank Kirkpatrick, Milwaukee contractor. Equipment is Janitrol conditioner GA-60, by Surface Combustion Corp. Water heating: Leo 20-gal. automatic storage unit by Pittsburgh Water Heater Corp.



Compact Units Save Space in Modern Homes

IN ABILENE, Texas, Builder H. L. Rice erected a home for M. Lacy Bird, divisional manager of the Community Natural Gas Co., and equipped it as shown in the illustration at left. The heating is supplied by a gas-fired warm air furnace by Payne Furnace & Supply Co. Ample domestic hot water is supplied by automatic storage unit by the Hotstream Heater Co. The architect was J. H. Hughes, Abilene, Texas.

THE STEEL SQUARE— Most Important Tool in the Builder's Chest

This is the first article in a new series on the many important uses of the steel square; both elementary and advanced problems will be presented.

By Gilbert Townsend*

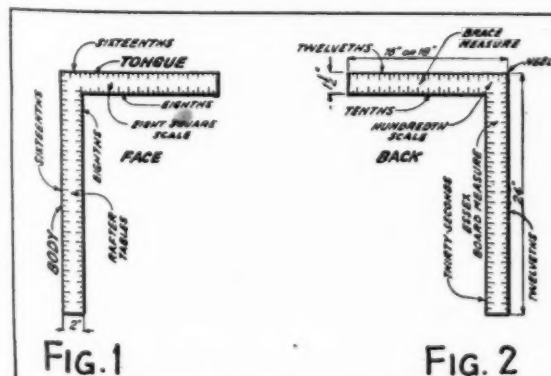
EVERY trade has its own special tools which are particularly suited to the needs of the craftsmen in that trade and are practically useless in the hands of others not trained to use them. It is skill in the handling of these tools which makes the experienced or capable workman highly efficient at his own trade, so that he can do a particular job of work quicker and better than a less capable man can do it, and infinitely better and quicker than can an untrained hand, if indeed the untrained man is able to do it at all. Of all the tools used by the workers in any particular trade there is usually one which stands out from the others as typical of that trade, either because it is used most frequently, or because it is most useful.

When the average man thinks of a carpenter he pictures him carrying or working with a hammer or a saw, perhaps because he is used to the noise of hammering and sawing which is heard wherever a new house or other building is going up. Although the hammer and saw are so much in evidence, there is one tool in the carpenter's tool chest which is of infinitely greater importance to him and the mastery of which marks him as a thoroughly well trained craftsman, whereas the hammer and saw require comparatively little skill or knowledge. This tool is the Steel Square.

We are told that in the great museums are to be seen specimens of squares used many centuries ago by primitive workmen in far-away countries, so it is evident that this is not a new tool. During the many years that the square has been in use by carpenters, it has been improved and standardized so that today the modern steel square is an instrument which, in the hands of a carpenter

*Mr. Townsend is affiliated with the firm of Ross & Macdonald, architects, Montreal, Can., and is author of the book, "Steel Square."

FIGS. 1 and 2: Two sides of a standard steel square showing parts and scales. Figs. 3 and 4: Explanation of the right triangle. Fig. 5: The location of the hundredths scale on the steel square.

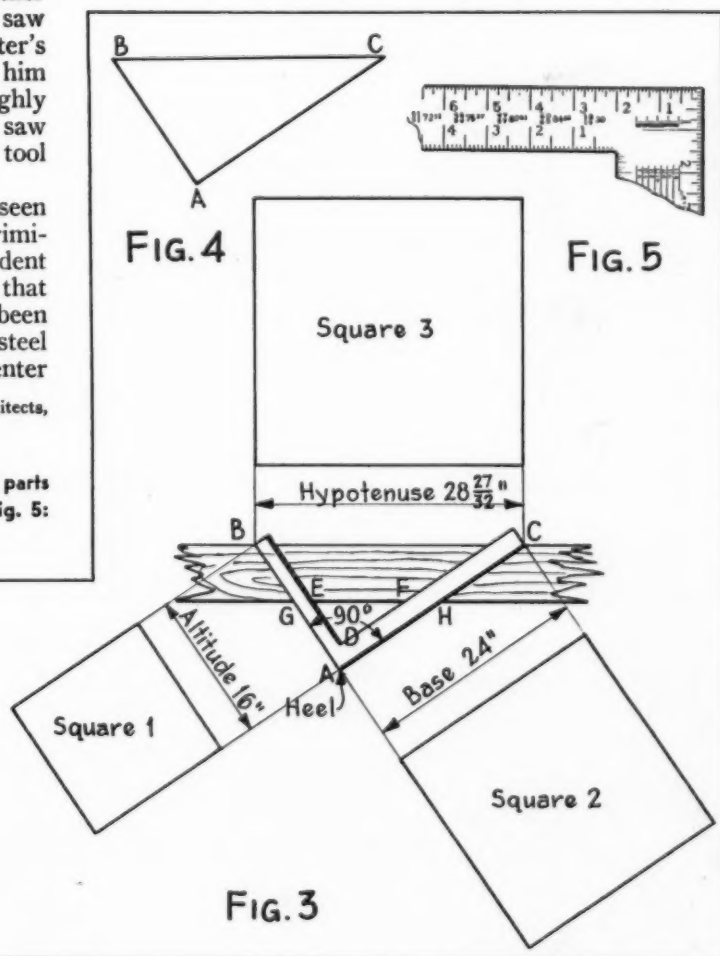


who thoroughly understands it, is of the utmost value. Apart from its usefulness to insure that the work being carried out will be absolutely "square" and "true" and that the different parts of the work will fit together properly, the square can be utilized as a measuring and calculating instrument since its edges show a great variety of different divisions and the sides have been covered with tables and figures etched permanently into the steel. These make it a veritable "lightning calculator" to save the carpenter many hours of tedious figuring and to help him to solve easily many puzzling problems in connection with framing which otherwise would cost him much worry and many hours of tedious mental work. All these figures on the square at first glance look very complicated and confusing to the young craftsman, but the explanation of how to use them is really quite simple and easy to understand. It is the purpose of the author of this series to describe the uses of the square in such a way that any workman can easily understand them and, in addition, to point out some applications to framing problems which may not be known even to some experienced tradesmen.

Parts of the Square

Although it goes without saying that the great majority of carpenters are familiar with the steel square and its markings, and the names by which its various parts are

(Continued to page 126)





TWO of the attractive Colonial homes in stone and brick built by H. R. Moyer in Blue Grass Village, adjoining Philadelphia, Pa.



HARRY R. MOYER, builder

"Blue Grass Village"

"Best Value I Have Ever Given
in 30 Years of Building," Says
H. R. Moyer, of Philadelphia

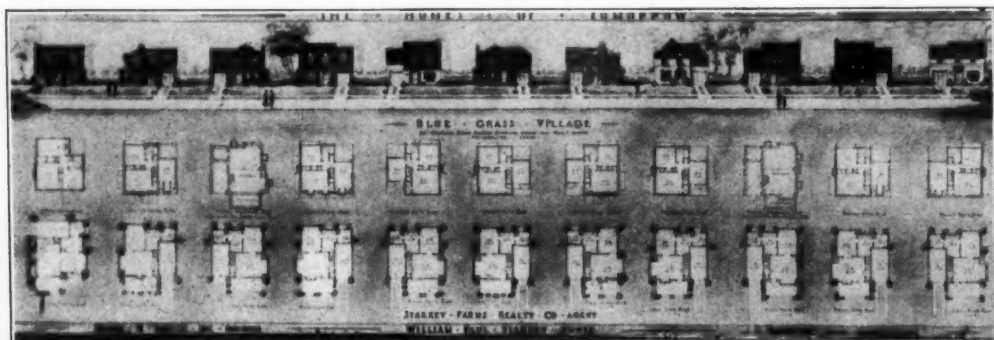
JUST off U. S. Route No. 1 on the north side of Philadelphia, and within easy reach of the center of town, Harry R. Moyer, builder, and William Paul Starkey, realtor, have created "Blue Grass Village—the Homes of Tomorrow."

In a little more than a year some 30 houses have been built—most of them in the \$8,000 to \$10,000 range, featuring masonry construction, large plots, good design and a restricted environment. Some 500 acres are controlled by the developers, which permits them to rigidly restrict the area and prevent the encroachments of shacks or unwanted nonresidential structures. No lots are sold separately, and the builders feel that this type of control of both land and construction gives the owner a highly valuable protection against any possible deterioration of the surroundings.

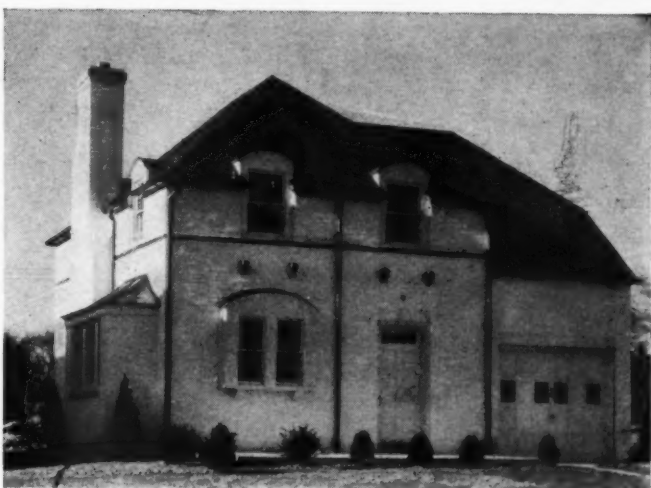
Harry R. Moyer, the builder, has been in this business for more than 30 years, and he declares that in these Blue Grass Village homes he is giving the best value he

has ever given. In a few graphic words he was able to describe how much better these houses are than even the most expensive mansions of a few years ago. The construction includes, for example, 18-in. stone foundations and masonry walls; an all-copper pipe hot-water heating system with Modine fin-type radiators, Arco oil burning boilers. The houses have 4 inches of mineral wool insulation, Anaconda copper gutters, downspouts and flashing, metal weatherstripping, U. S. G. Rocklath plaster base with *three* coats of plaster in addition, and Cornerite metal corners. They are equipped with Howell overhead-type doors.

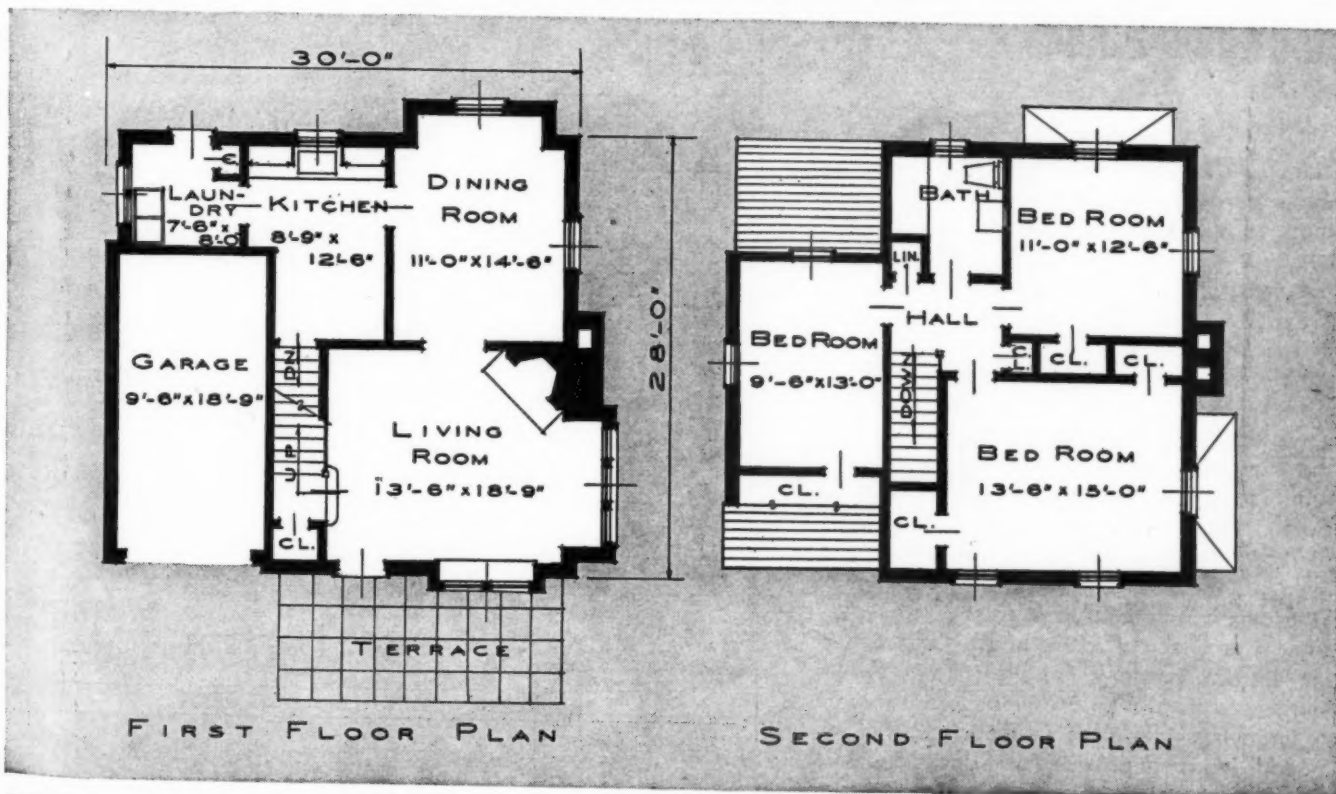
Before work started Moyer had his young architect, Drexel Webb, prepare a large colored drawing showing all the houses on the streets with their floor plan. The floor plan is the product of years of experience worked out by Moyer. The exteriors, six of which are pictured above, have a harmonious Colonial treatment that has done much to give sales appeal to the project.



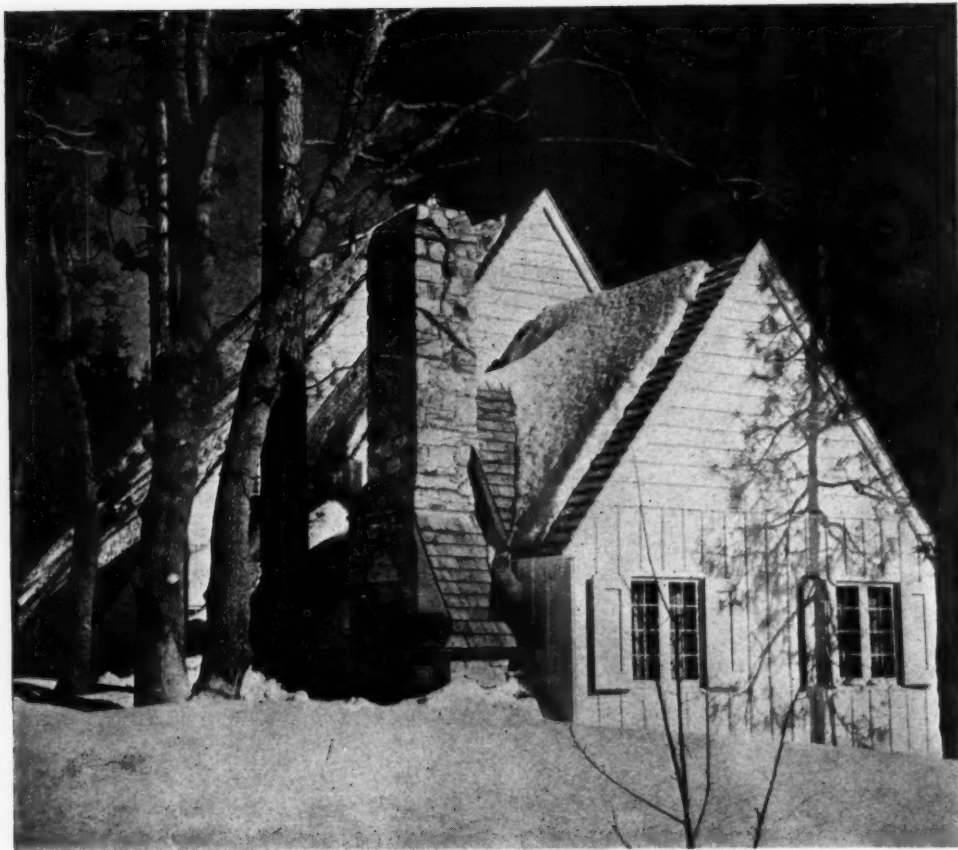
BEFORE work started Moyer had his architect prepare the colored drawing shown at left, which is about 6 ft. long and 2 ft. high, mounted on heavy cardboard and covered with cellophane. On it are shown each house on the street, and below it the floor plan. It proved a valuable aid in selling.



FOUR VARIATIONS of Blue Grass Village home exteriors for the floor plan below. Earlier models had chimney in center, but on latest model it is placed at end of house as indicated in plan.



FLOOR PLAN of typical Blue Grass Village home, which features laundry off kitchen, attached garage, living room with corner fireplace and 2 attractive bay windows. There are good cross ventilation and lighting in all rooms, ample closets. Minor variations in the exterior are indicated in the elevations shown above.



THIS month's front cover home presents a snug hillside design, as built in the hills of San Bernardino County, southern California; Lester H. Hibbard, Los Angeles, architect; R. M. Koch, builder. It is one of the Redwood "Home of the Month" series, sponsored by the Holmes Eureka Lumber Co., San Francisco.

TRUCOST estimating figures for the home designs in this section will be mailed free to any reader requesting them on his business stationery and indicating which ones are desired; each of these Service Sheets lists the quantity survey of materials for one design.

Front Cover Redwood Home

THIS unusual seven-room two-story house was selected by a jury of California architects as the California Christmas Home because of its setting in the snow among the trees in the hills of San Bernardino County. Like the other homes so selected, it employs redwood extensively in construction, in this case a most appropriate material because of the wide temperature variations between summer and winter in the mountains. Redwood sills are set on a reinforced concrete foundation; all exterior siding, trim, frames and shutters are also of redwood.

THE plan is well handled in relation to the site. The principal rooms and a large living terrace overlook the view down the hillside, as do the second floor bedrooms. A large brick fireplace in the studio-ceilinged living room provides part of the heat, the balance being taken care of by individual gas units. The steep, picturesque roof is covered with red cedar shingles.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

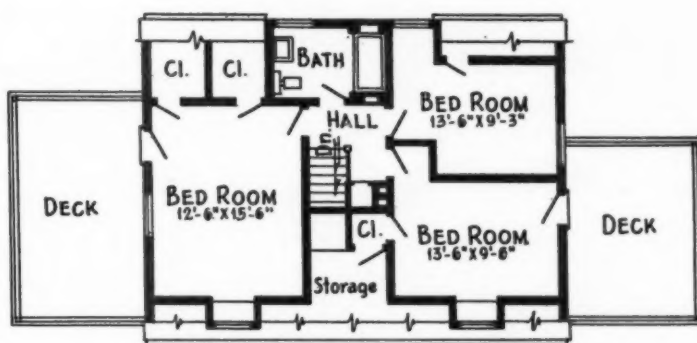


THE charming little home in the above winter setting at Norwalk, Ohio, was designed by A. W. Stoutenburg; Janotta & Croft, builders.

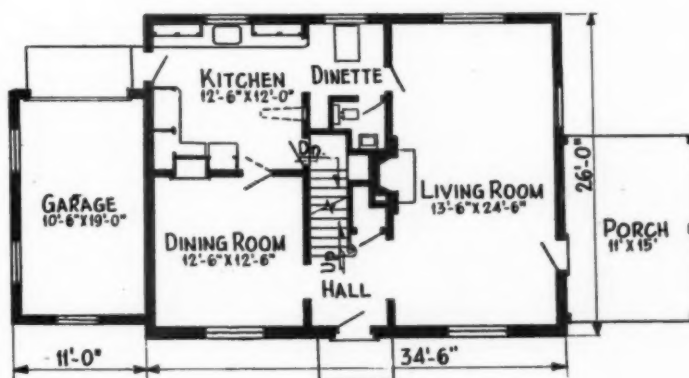
6-Room Stone Front Colonial with Attached Garage

THERE are many features to recommend this charming Colonial home in Norwalk, Ohio—compact planning for maximum economy, careful detailing to give excellent design, well considered choice of materials to assure high value for the money. A. W. Stoutenburg, the architect, points out that the Briar Hill stone veneer treatment gives a rich, colorful front elevation at little extra cost. The porch and garage wings tie the stone into the balance of the building in a most satisfactory manner, with the transition logically handled. The wide frieze adds the proper finishing touch, and the railings over the garage and porch balance the design.

THE house was planned to have an efficient kitchen which would not be overcrowded, and a separate dinette connecting with it and the living room. Other rooms are generous, and there is ample storage space throughout. The Andersen triple-casement windows in the living and dining rooms and double casements in the dormers assure good light and plenty of ventilation. Wide clapboards painted white complete the exterior walls; Keasbey & Mattison asbestos-slate shingles are laid Dutch lap on the roof. Hinde & Dauch Ideal insulation, Norge oil-fired winter air conditioning, Carrara walls, and rubber tile floor in the bath, linoleum floor and counters in kitchen, and oak floors in other rooms are features. Contents, 25,500 cubic feet; Janotta & Croft, builders.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

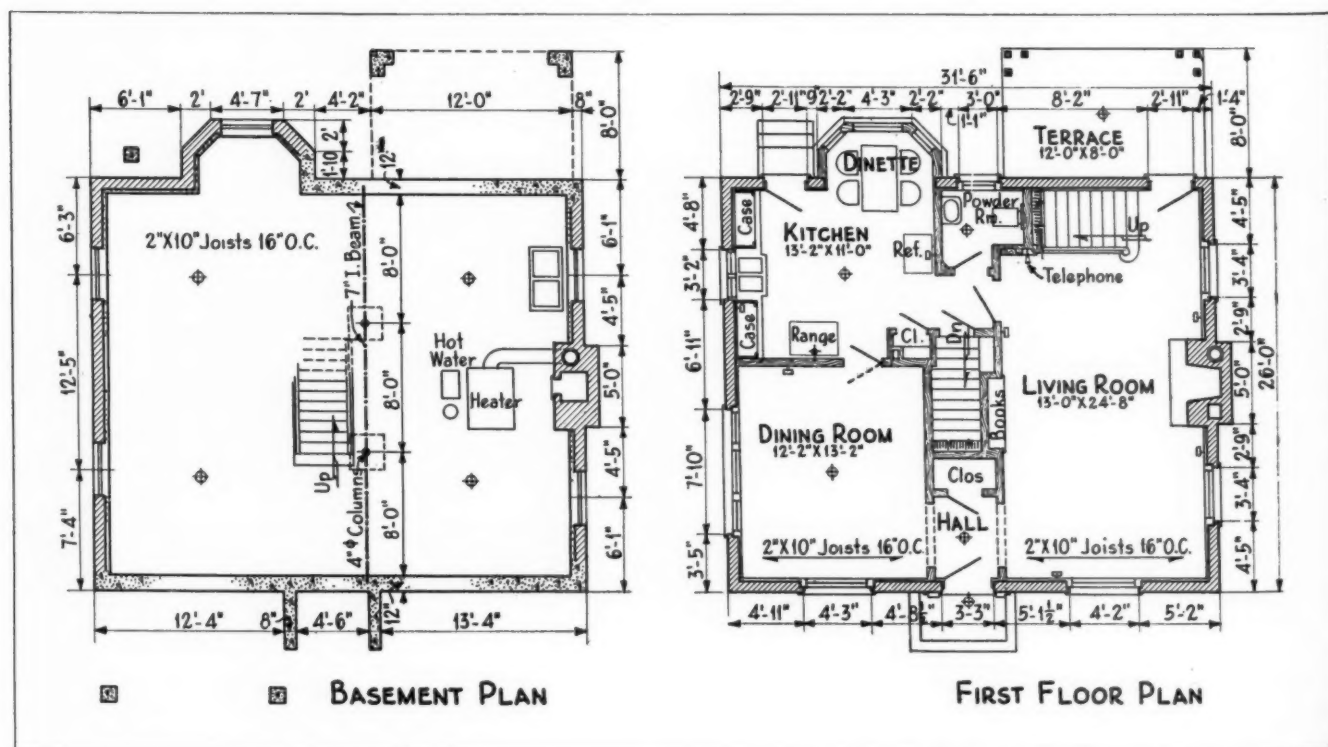


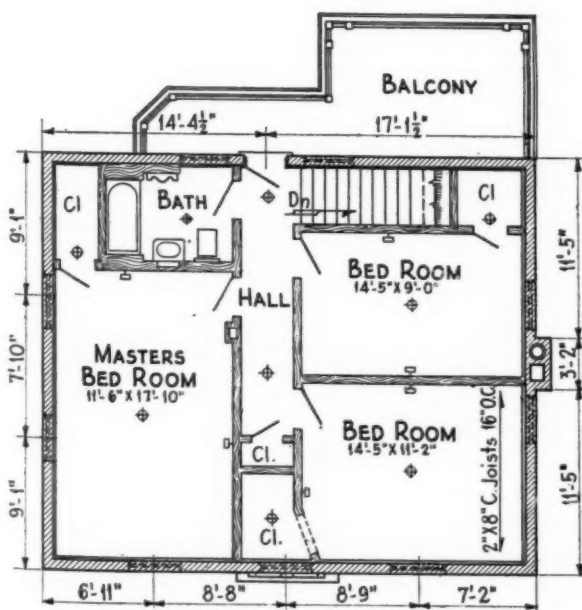
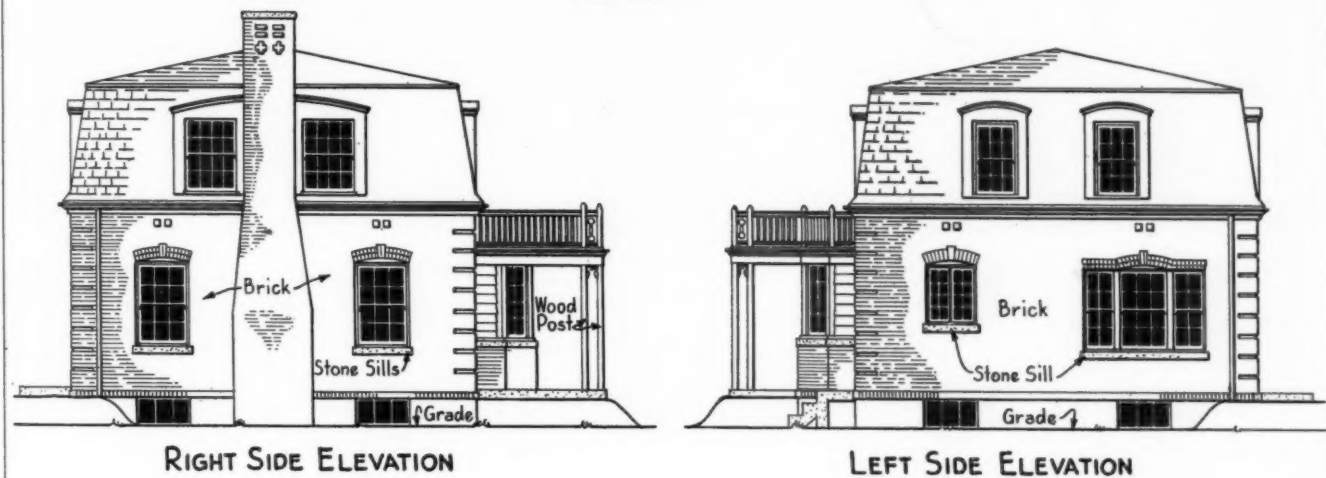
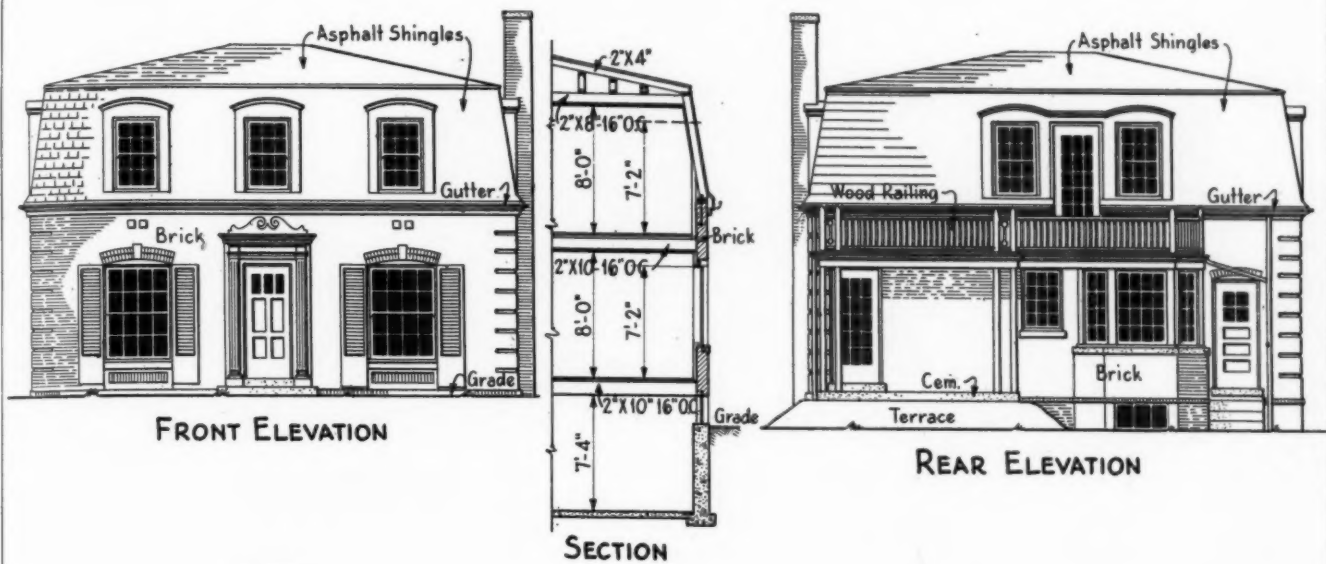
WITHIN the compactness of this six-room French design, as shown at the left and in the elevations opposite, there has been planned an unusually large amount of livability, as revealed in the floor plans detailed below.

A Gem of Compactness—6-Room French Design

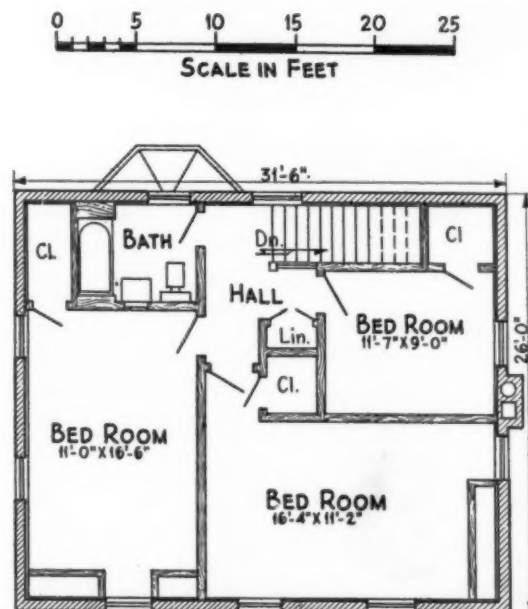
THIS HOME, designed and built by Rice & Rice, Inc., Chicago, is worthy of careful study as a splendid example of maximum space utilization within a $31\frac{1}{2}$ by 26 foot overall dimension which offers so much in livability. Basement arrangement groups heating and laundry on one side with clear recreation space on the other; the dinette bay off the kitchen is well lighted and out of the way of traffic; powder room off connecting hall for circulation between living room and kitchen is handy; stairs at end of living room are easy to reach from kitchen and living

terrace. The second floor can be arranged to have more available room space if the pitch of the mansard roof is steeper, as shown in elevation; otherwise, allowance must be made for bulkheads, as in alternate second floor plans. Construction highlights are walls of 8-inch brick and Way-lite block, furred with plaster on U.S.G. Rocklath over $\frac{1}{2}$ -inch Balsam-Wool, slate roof, 4-inch rock wool ceiling insulation, Standard Sanitary two-compartment Hostess sink, 1lg kitchen fan, Lightolier fixtures, automatic gas-fired winter conditioner.





SECOND FLOOR PLAN

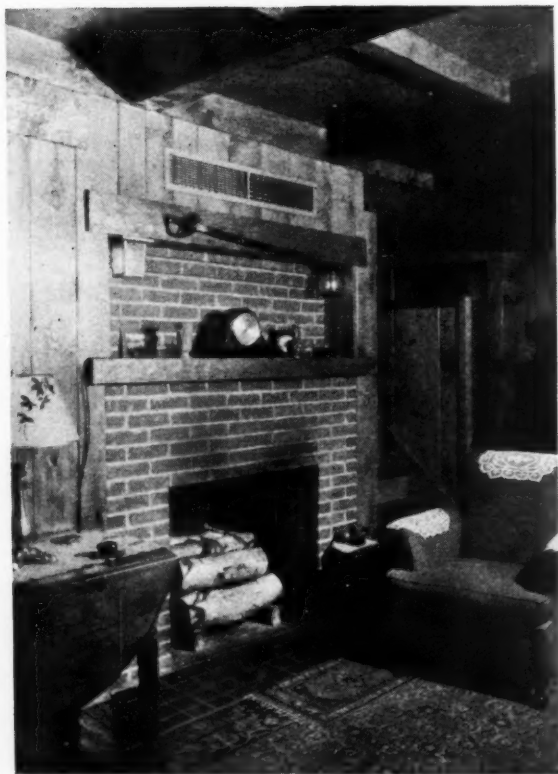


ALTERNATE SECOND FLOOR PLAN



THIS cottage style house was specially built by J. H. Kennedy to withstand severe Maine winters.

"Thermos Bottle" Home in Portland, Me.



FROM the exterior, as shown above, the many unusual features of this home, built for E. L. Sederquest of the Portland Technical College, are not evident. However, both the planning and construction, as worked out by S. Lindsay Lord, dean of the College, and an engineer, and J. H. Kennedy, the builder, incorporate novel features, particularly relating to the equipment and method of assuring a warm and comfortable house during the severe Maine winters. The house, which is described as an early Salem cottage style design, was further characterized by the term "thermos bottle"; even distribution of heat and low heat loss have been secured through the construction used.

IN planning this house, an open type layout for free circulation of air at all times is one of the basic principles. In the view at the left the living room fireplace is seen in the foreground with a portion of the stairs to the second floor and the front door beyond. The chimney for this central fireplace is really the heart of the heating system since it contains a central supply heating duct from which branches lead to the various rooms of the house. The living room supply grille can be seen above the fireplace near the ceiling. The entrance hall and stair well are open all the way up to the roof, further assuring good circulation of air. Orientation was planned with front of house facing southeast to give sunlight in all rooms.

IN THE house, at the system is carried taken other supplies floor c

CONSTRUCTION FEATURES

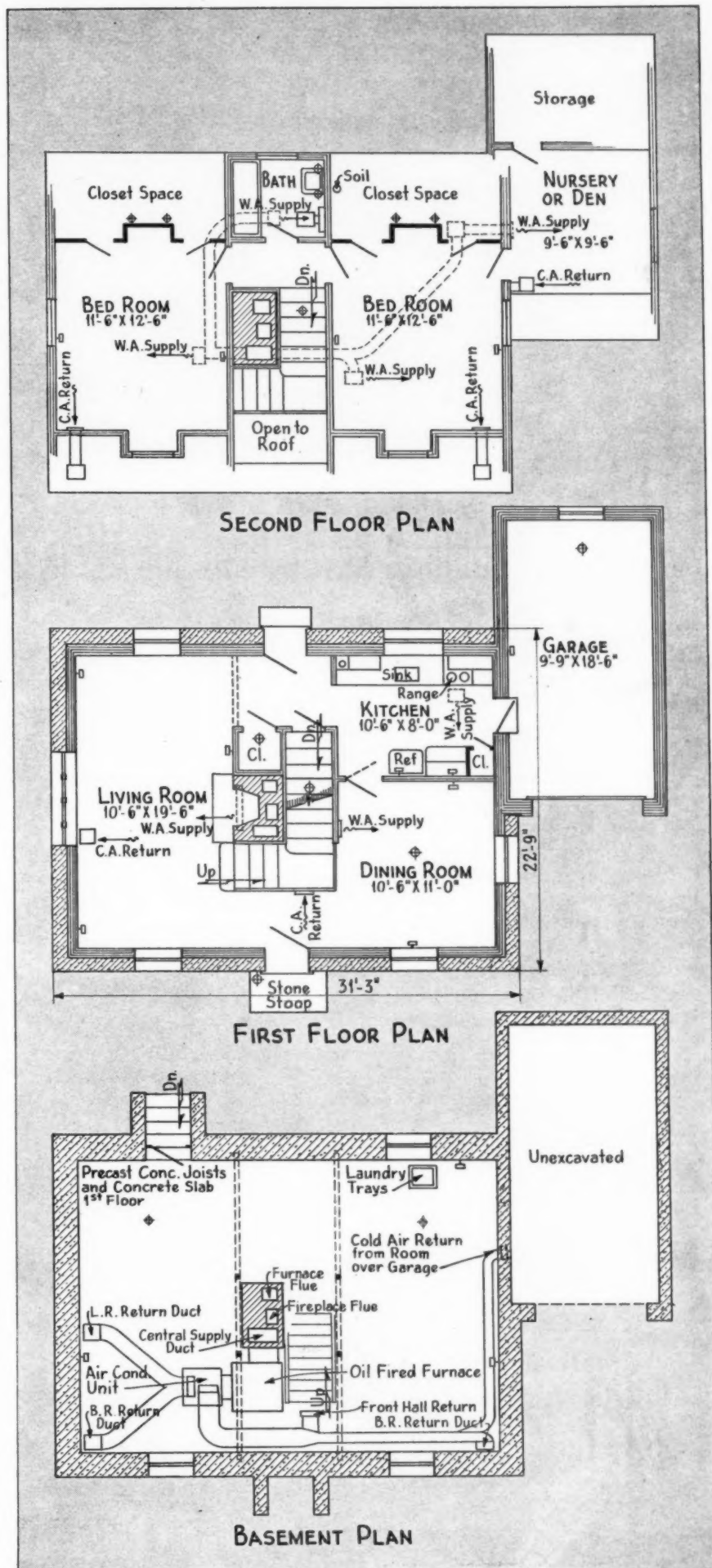
EXTERIOR walls on poured concrete foundation are built up of 8" cinder block finished on exterior with 3 coats of waterproof portland cement paint; covered on the inside with heavy asphalt paper as a moisture barrier, horizontal furring was placed over this to take the vertical knotty pine board paneling. Pine is used throughout the first floor except kitchen walls which are finished in painted plywood. First floor construction is 2" concrete slab on precast joists with strip oak flooring for the finish.

Second floor consists of hand-hewn timbers 4 ft. on center, over which a sub-floor of $\frac{3}{4}$ " plywood was laid, and covered with oak flooring for second floor; the beams with plywood between are exposed below as first floor ceiling finish. Gable ends are of frame construction finished on the exterior with horizontal creosoted rustic siding, plastered and papered inside. The entire second floor is insulated with 6" of Flintkote rock wool over ceilings and 4" in the side walls; the job took between 2 and 3 tons of rock wool. Asbestos shingles were used on the roof.

Detroit Steel Products Fenwrought casements were installed with double glazing permanently attached after windows had been thoroughly cleaned; paper gaskets were used to seal the air space between glass surfaces.

In the kitchen all built-in cupboards are of plywood finished with a skim coat of white lead and oil wiped off and shellacked to show grain. The ceiling is covered with ground glass panels attached to the beams with lights set above the glass, giving even illumination without shadows. The winter air conditioning system consists of an oil-fired forced-air unit with ozonizer to freshen the air, since none is brought in from outside.

IN THE floor plans of this Portland, Me., house, built by J. H. Kennedy and shown at the right, the novel air conditioning system is detailed. The central supply duct is carried up in the chimney with leads taken off for living and dining room and other rooms including the kitchen, being supplied from ducts run above second floor ceiling and then down to rooms.





THE variation at the left of the three-level basic plan shown on the opposite page has the front entrance and vestibule attached to the left side, and a bay window centers on the second level wing. Otherwise, this house is identical in plan with the one shown directly opposite.

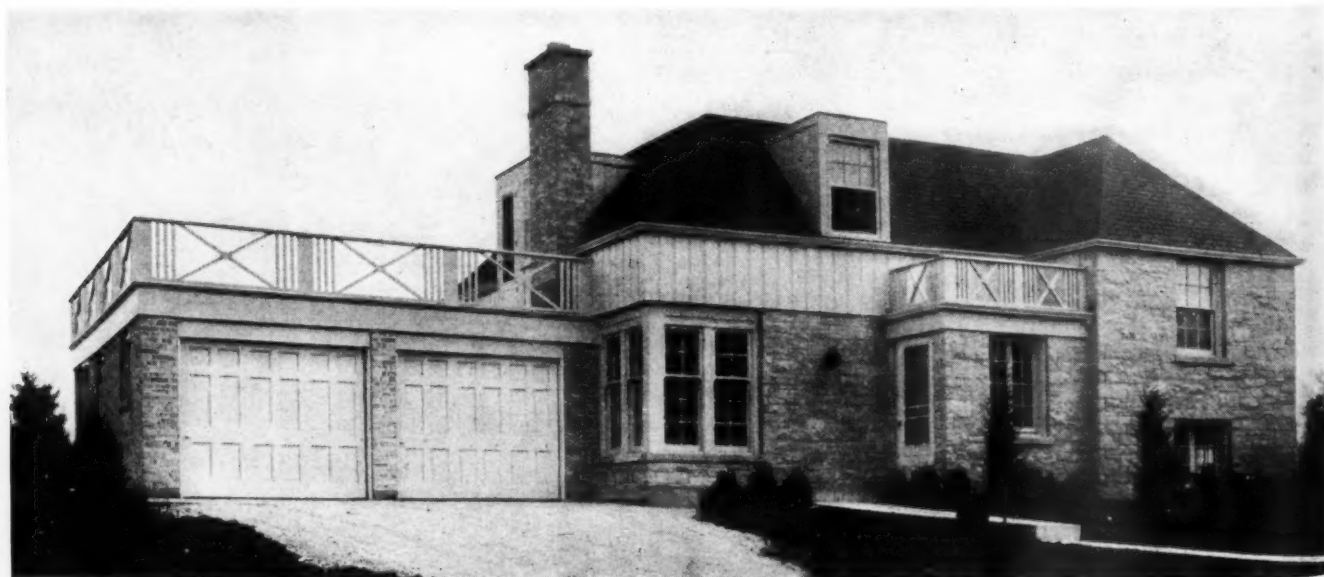
Flexible 3-Level Plan for Wide Range of Styling

LAST YEAR, Leonard W. Besinger and Associates, a firm of builders, developers and architects, Oak Park, Ill., inaugurated a building program in Clarendon Hills which proved to be the largest single building program in this Chicago suburb since it was laid out in 1893. In nine months Builder Besinger, who previously had limited his operations to a more expensive class of homes, sold and completed 58 houses in this rolling section. Because of this hilly condition, an economy three-level plan was found to be most practical; it consists of garage and utility room on the lower level, living room, dining room, kitchen at grade, and two bedrooms and a bath a half-flight up from these rooms. With this as a starting point, a wide range of variation in plan and exterior has been worked out, and nearly all of the 58 houses are based on it, as shown on these pages. Consequently, an equally wide range of

prices was possible with such features as extra bedroom, fireplace and attached garage being offered as extras.

Construction features of these homes, which are financed with FHA mortgages, include the following:

Foundation of 12" poured concrete on 24" footings, solid brick walls (or stone) furred with Insulite plaster base on outside walls and Rocklath inside, Ludowici-Celadon 4" rock wool in ceilings, No. 1 framing lumber, Ruberoid asphalt shingles laid over 15 lb. felt base, Toncan leaders and gutters, door and window openings in brickwork caulked, L-O-F glazing, storm windows and copper screens throughout, oak floors over sub-flooring except linoleum in kitchen and tile in bath, all interior trim selected white pine or sap gum, American Radiator gas-fired winter air conditioning, Schlage hardware and Hoosier built-in efficiency kitchen cabinet units.



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THE house at the right was built as Besinger's model home in Clarendon Hills, Ill. The floor plan below presents this original layout from which the subsequent variations were made; three are shown on these pages.



BECAUSE of construction economies possible with it, this basic three-level plan has proved most popular. Excavation under the remainder of the house allows heating plant and laundry to be located there, and makes the present utility room space available for a maid's room or hobby room. Likewise, the bedroom above the living wing can be left unfinished.



FIRST FLOOR PLAN



SECOND FLOOR PLAN

AT the left is shown a reversed version of the above plan styled in stone, brick, stained timbering and siding. A fireplace has been added. LEFT on opposite page: The largest of the Besinger houses has a two-car garage added on the living and dining room side, making the first level space available as an extra room.





Finely Detailed Pine Interiors in Minneapolis Home

WITHIN its sweeping modified French Provincial lines, this Minneapolis home contains a wealth of interesting wood-work detail, including paneled walls and numerous built-in shelves, cabinets and niches, all done in clear and knotty Shevlin pine. Rollin C. Chapin was the architect, Lindquist and Carlson, builders. In plan there is provision for the comfortable living of a medium sized family; plenty of space is set aside for the entertainment of individual

guests, and at the same time there are rooms where the parents or children can retire to work or study. Two full baths and two lavatories are conveniently located throughout the house. The cold weather of this section was carefully considered in the construction; the second floor side-walls, dormers and ceiling are fully insulated with J-M rock wool; heavy building paper is laid over the D & M sheathing beneath veneer; garage is lined with 1/2-inch Insulite.

IN the living room, the entire fireplace wall features a most attractive handling of built-in cupboards, open bookshelves, and mantel. The Shevlin knotty pine and No. 1 pine trim are finished with Pratt & Lambert stain and 2 coats of dull finish lacquer. Note the way the shelves are continued across the window at the far right.



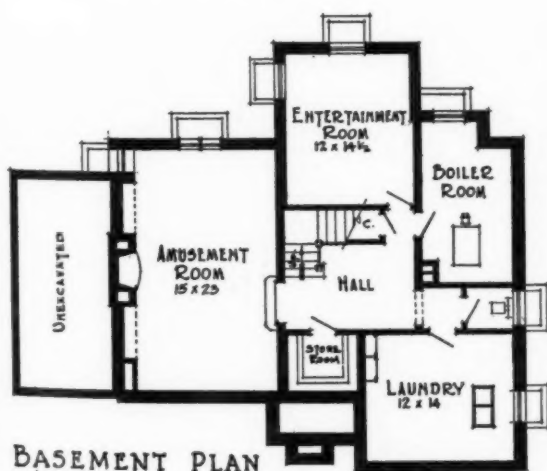
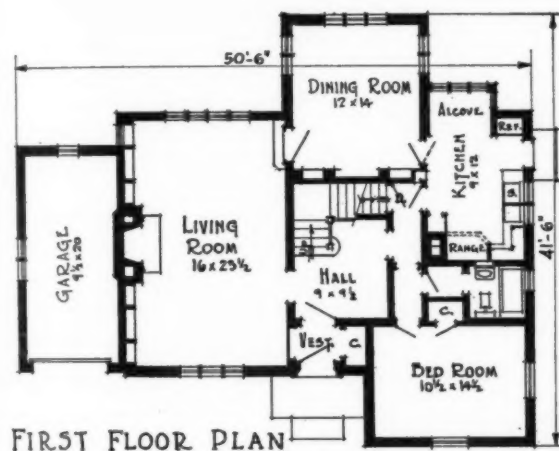
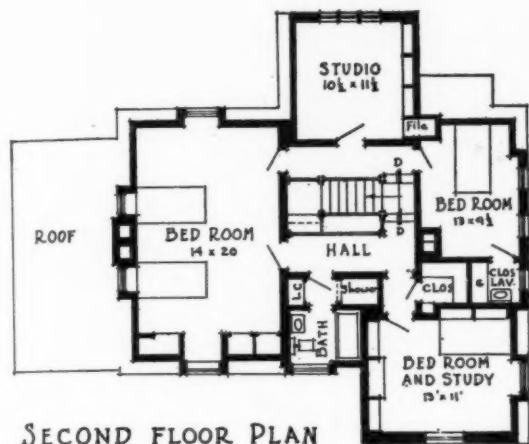
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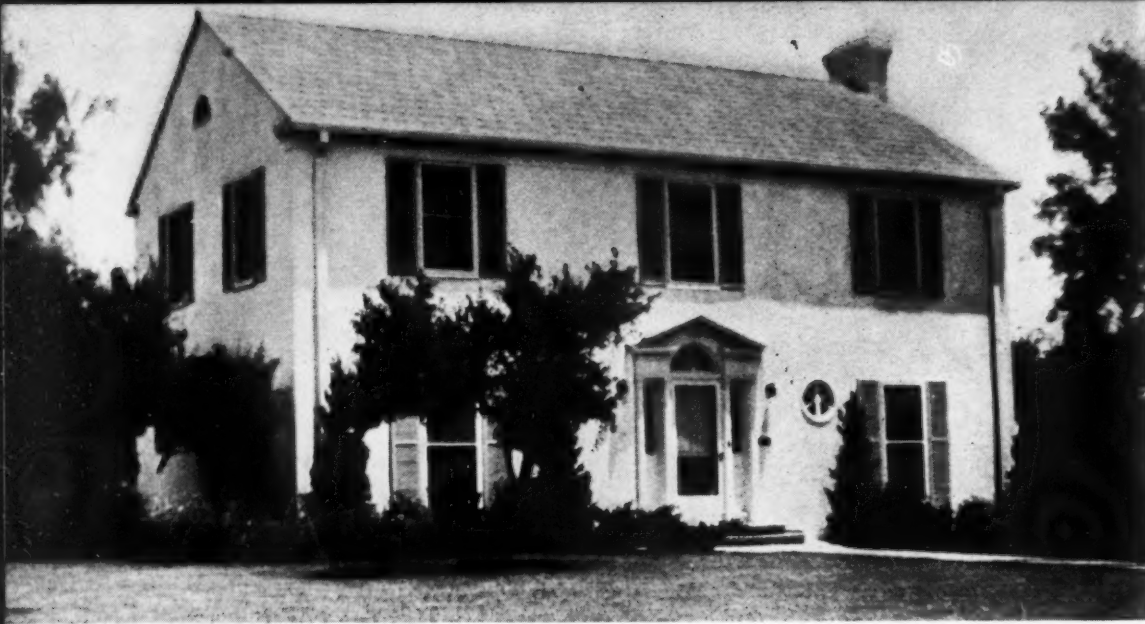
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THIS Minneapolis home, designed by Rollin C. Chapin, architect, and built by Lindquist and Carlson, has many built-in features such as the bookshelves in the beamed cathedral ceiling studio; the casement window frame picks up the roof line in a pleasing manner. The bedroom and study has cabinets flanking the built-in chest of drawers to utilize space at the eaves.

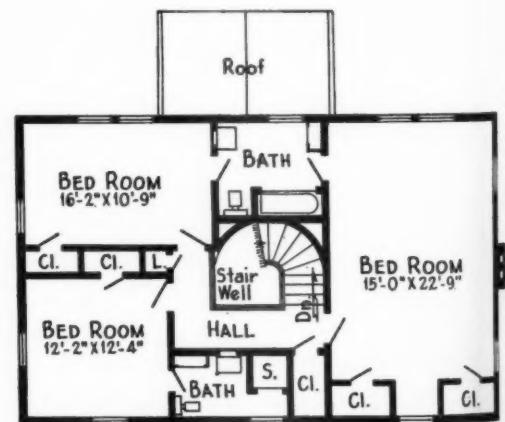
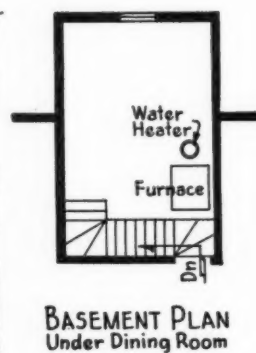


IN the plans above, an outstanding feature is the manner in which a large amount of space has been planned for recreation and entertainment. This is quite unusual in an eight-room house of this apparent size. In the view at the right the recreation room fireplace can be seen through the grilled swinging doors leading to it from the interestingly detailed basement hall.

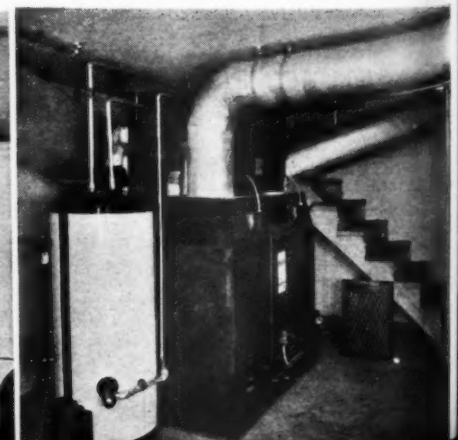


Texas 7-Room Prize Winner

IN the American Gas Association Builders' Competition, the house above was chosen as one of the first prize winners. It was built in Abilene, Tex., by H. L. Rice and designed by J. H. Hughes, architect. The rooms throughout are spacious and airy, with a terrace off living and dining rooms for outdoor living. A partial basement is used for storage and heating plants. Since there is a lavatory on the first floor for guests, the two upstairs baths are off the bedrooms. Construction features include reinforced concrete foundation, frame walls sheathed with Insulite Bildrite finished with stucco on the exterior and Insulite Lok-Joint lath and plaster on the interior; roof is Dutch lap asbestos shingles; foyer floor is marble, baths are tile, linoleum in kitchen, other floors oak; doors, windows, trim of white pine.



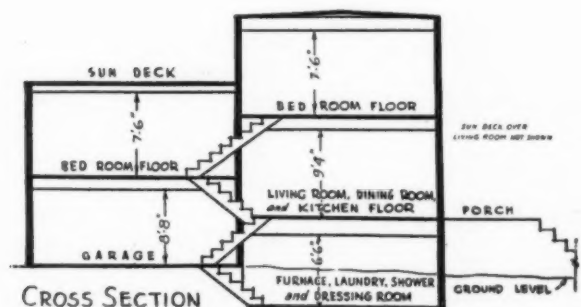
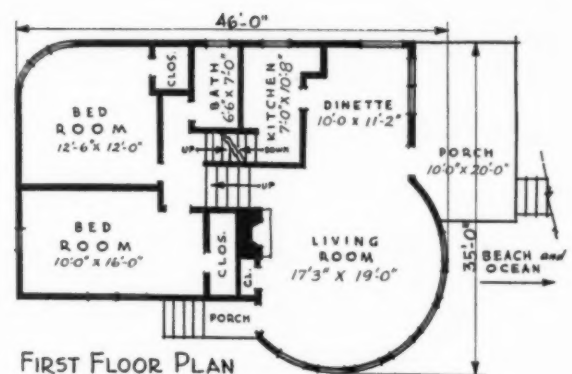
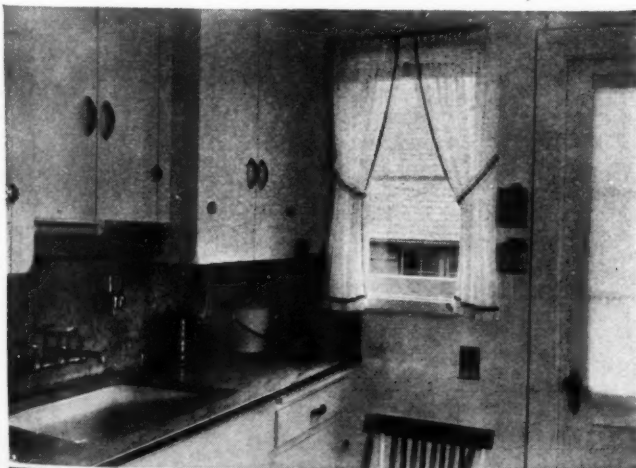
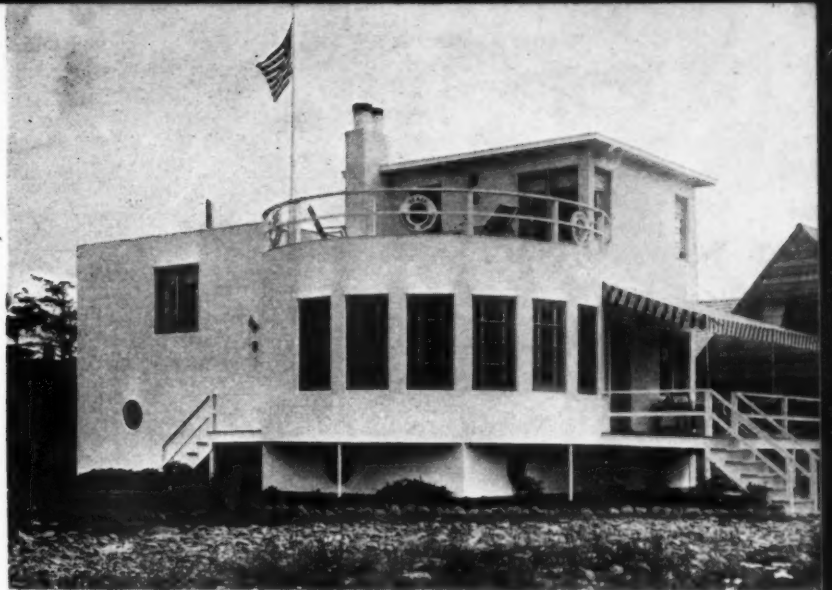
THE kitchen is arranged in a convenient L-shape with built-in breakfast corner opposite. The gas stove is a Garland range; refrigerator, Electrolux. The Payne forced air heating plant and Hotstream water heater shown at right.



Novel Year-'Round Home on the Pacific

OVERLOOKING the Pacific at Seaside, Ore., there stands this streamlined five-level house built by Al Hansen. Appropriately, its lines suggest those of a ship with portholes on the first floor, railing deck, flagpole, and chimney funnels. The living room, as shown at the right, has a semi-circular outside exposure containing seven windows. The construction is as modern as the design, with exterior walls of $\frac{3}{8}$ -inch Resnprest plywood over 15 lb. felt and 1x8 shiplap on studs. All exterior plywood joints are slightly V'd for tightness, nailed with 5d galvanized nails, and sealed with Fuller's plastic cement. Three coats of Lowe Bros. outside paint is the finish.

THE interior, as shown in the kitchen and bedroom views below, also has walls of resin-bonded plywood. The paneling in living room, dining room, bedrooms and halls is quarter-inch mahogany faced plywood joined so as not to show panel edges. Finish in living and dining room consists of two coats of Fuller's bleaching liquid, one coat of Lowe sealer, and one coat of dull varnish. Walls and ceilings of kitchen and bath have gloss enameled finish plywood laid over 1x6 end-matched flooring. Floors throughout are Pabco linoleum. Equipment includes Westinghouse electric range, refrigerator and automatic electric water heater, H. C. Little oil burner, Rittenhouse door chime, Coburn upward-acting garage doors.

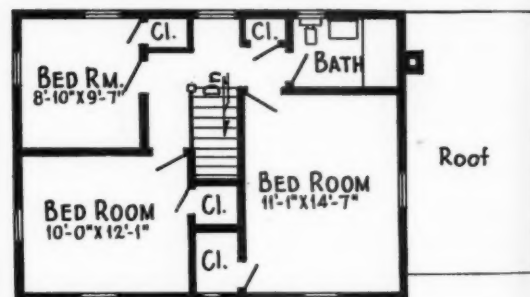




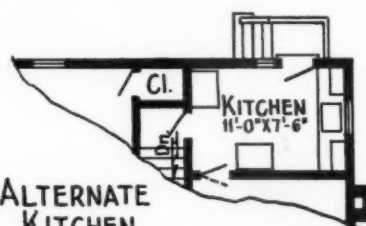
Variations in Economy Type of 6-Room Plan

THE three attractive Colonial exteriors shown at the left were developed to fit the typical basic two-story plan of six rooms which have proved to be so popular in recent building. The one at the top of the page was built by Newland C. Prior at Teaneck, N. J. It is slightly larger in floor area than the other two, and in addition has an attached garage. Overhanging second floor allows larger sizes of bedrooms.

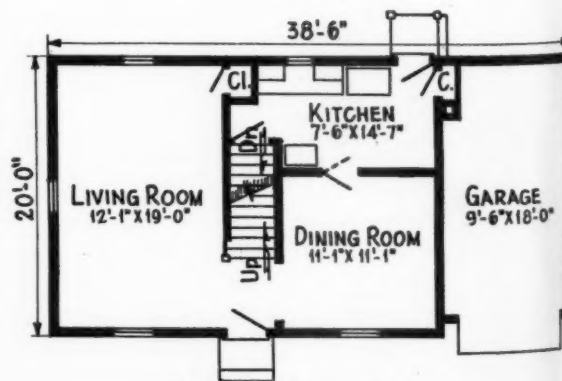
THE two houses below were built by Albert W. Walker in his Green Acres development, Washington, D.C. They were designed by Schreier & Patterson, architects. By turning the plan lengthwise on the lot and placing the entrance porch at one side, as illustrated at the bottom of the page, further variation of this compact basic layout was achieved. These houses are about two feet narrower than indicated below; the kitchen is arranged as shown in the alternate plan.



SECOND FLOOR PLAN



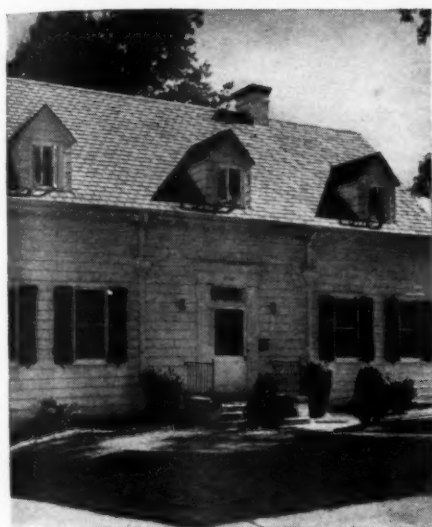
ALTERNATE KITCHEN



FIRST FLOOR PLAN



Builders swing to Gas!



Home in Atlanta, Ga.



Home in Beaumont, Texas



Home in Wellesley, Mass.

LET **GAS**
DO THE 4 BIG JOBS

COOKING
WATER HEATING
REFRIGERATION
HOUSE HEATING

Be sure the gas appliances you specify bear the Approval Seal of the American Gas Association Testing Laboratories.

Home in Leonia, N. J.

2½ MILLION HOMES USE ***GAS*** FOR HOUSE HEATING, AIR-CONDITIONING

In 1939 alone, more than 275,000 homes joined the swing to heating by gas

THE house heating system is often the biggest single factor determining a sale. By equipping your houses with Gas heat, you immediately add extra sales appeal and extra value for the buyer. For Gas heat is clean heat, thoroughly dependable, and most economical, all things considered.

By dispelling all thoughts of furnace-tending, ash-removing, fuel-storing, needless dusting, and house cleaning... the Gas heated house does its own selling.

Builders of low cost, medium priced, and expensive houses, find that Gas equipment helps sell them easily, quickly, and profitably.



Home in Chicago, Ill.



Home in Los Angeles, Cal.

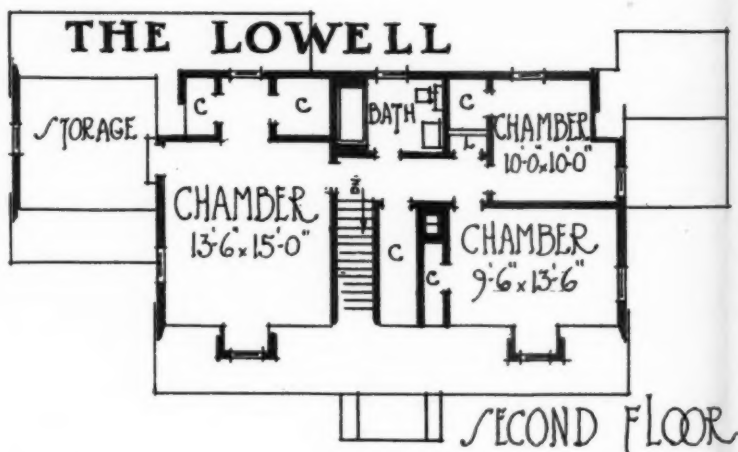




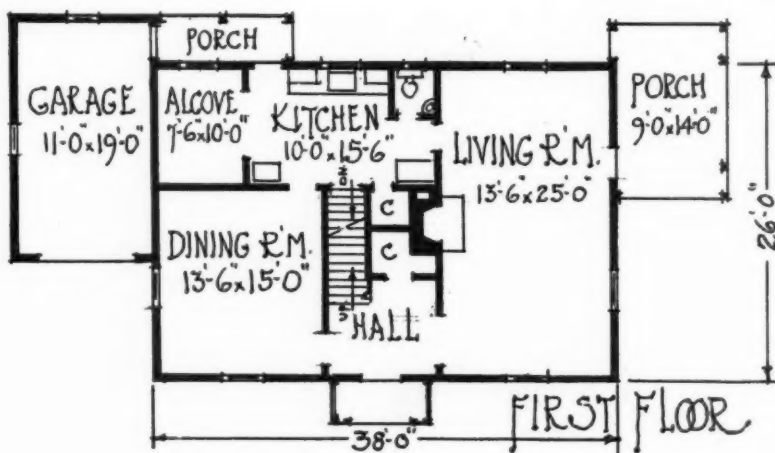
The Lowell—Quaint 6-Room New England Colonial

THE latticed entrance gives a quaint and attractive touch to this New England Colonial home designed by Charles Rais, West Springfield, Mass. architect. This is a practical 6-room house, with downstairs lavatory, a $13\frac{1}{2}' \times 25'$ living room, dining alcove, attached garage and attractively designed porch.

6 ROOMS



OVERALL dimensions of main body of house are only $38' \times 26'$. Yet Architect Rais has been able to provide a fairly spacious entrance hall and clothes closet, an exceptionally large kitchen and spacious, well-proportioned rooms throughout. It is a practical, salable design which he has found popular.





**MESKER
STEEL
CASEMENTS**
are

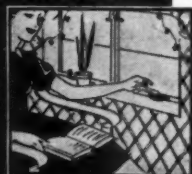
MORE WEATHERTITE



100% VENTILATED IF DESIRED



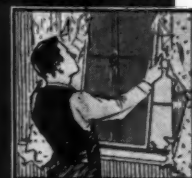
EASY TO OPEN



EASY TO WASH



EASILY SCREENED FROM INSIDE



"YES, JIMMY, MOTHER WILL TELL YOU WHY WE HAVE MESKER CASEMENTS IN OUR NEW HOME"

"They keep us much warmer in winter time, with no more cold drafts to give you the sniffles; and in the summer they let in all the cool air so that you can sleep comfortably. And Jimmy darling, Mesker Casements are so easy for mother to open and keep clean. You see the whole window opens when you turn this handle, and mother can reach right out and wash both sides of the glass from the inside."

"Daddy likes them too, because they give you more daylight to play by, and with screens on the inside, he can put them up so easily and never has to worry about you falling out. Now you see Jimmy, why Daddy and I agreed with our Builder that Mesker Steel Casement Windows are best for you and daddy and me."

See your nearest Mesker Dealer for complete prices on the entire Mesker Steel Window Line . . .

**MESKER GUILDHALL CASEMENTS
MESKER PIVOTED SASH**

**MESKER WICKET CASEMENTS
MESKER PROJECTED SASH
MESKER STEEL DOORS**

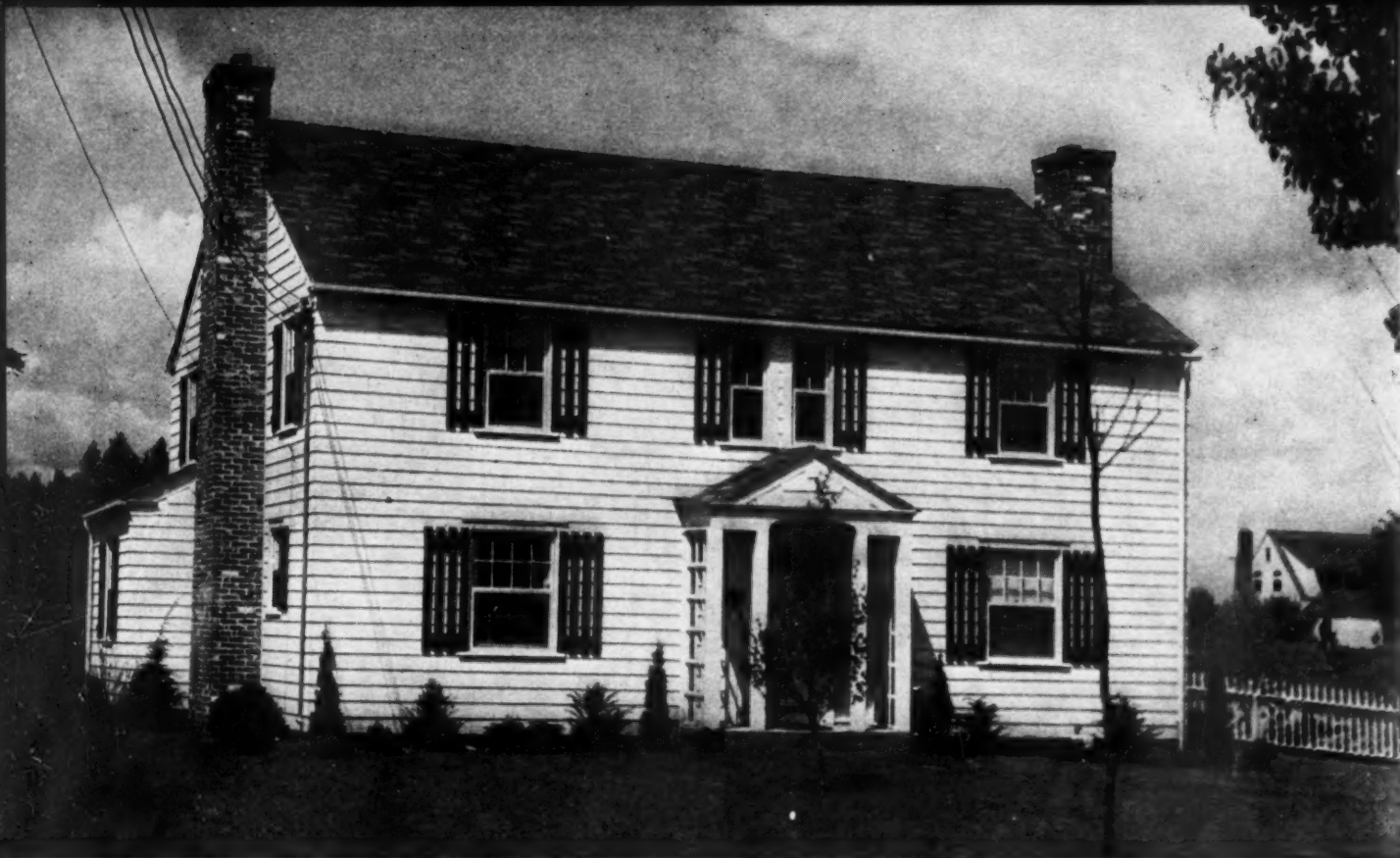
**MESKER BASEMENT SASH
MESKER UTILITY SASH**

MESKER BROTHERS

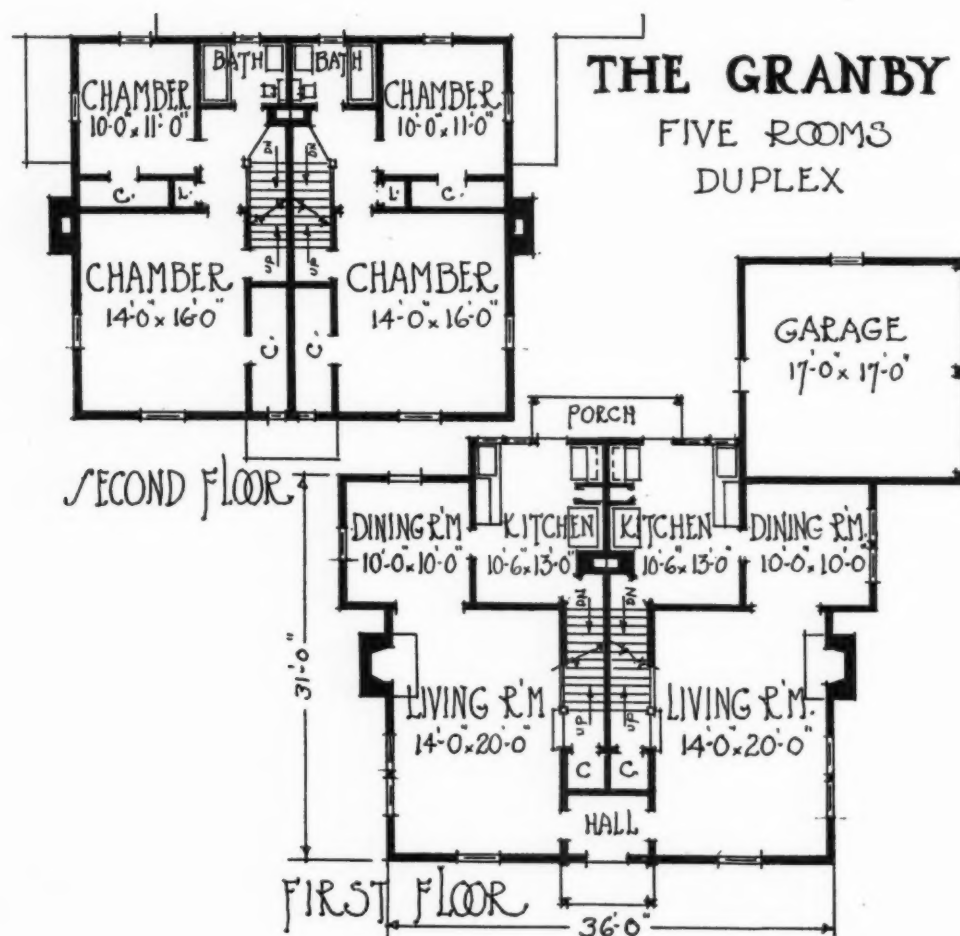


ST. LOUIS, MISSOURI

Manufacturers of Genuine Wrought Iron Windows . . . Steel Windows with Genuine Wrought Iron Sills and All Steel Windows



Two-Family House—5-Room Duplexes



PRACTICAL AND PROFIT-ABLE are the two words to describe this 2-family house designed by Architect Charles Rais, West Springfield, Mass. There are 2 fine 5-room duplex apartments with attached garage in this house, with an overall dimension for the main part of the structure of only 36' x 31'.

IMPORTANT in the low-cost planning of this 2-family house is the fashion in which the 2 bathrooms and the 2 kitchens are grouped together, reducing plumbing lines to a minimum. The living rooms—14' x 20'—are larger than average.



NEWS NOTE FOR 1940....MORE AND MORE

BUILDERS AND TENANTS WHO'VE HAD EXPERIENCE

... WILL CHANGE TO GAS REFRIGERATION



Builder "Our experience over many years with automatic refrigerators has sold us completely on Servel Electrolux gas refrigeration for our properties. Being the only refrigerator with no moving parts, it's the only one that can give permanently silent operation." *Harry A. Taylor, 520 Main St., East Orange, N. J.*

Tenant

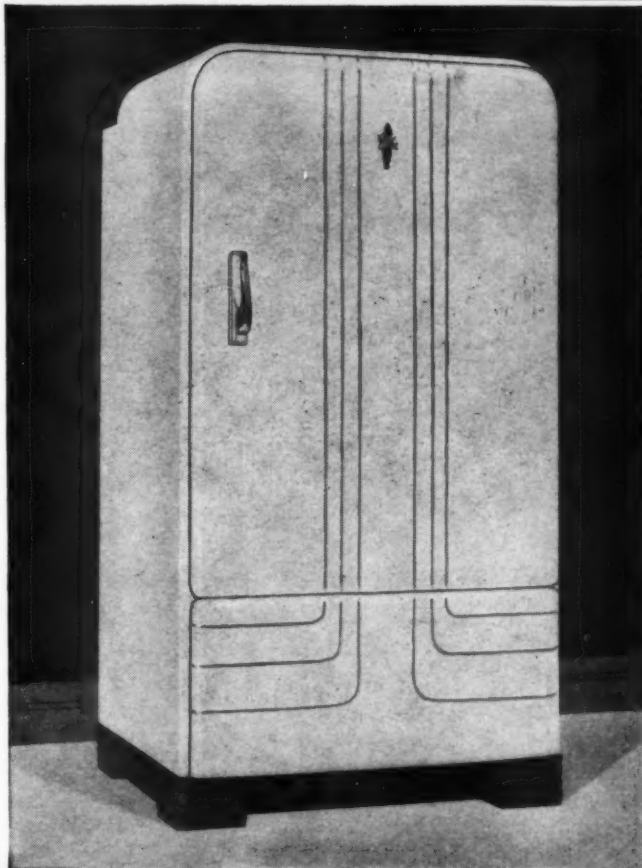
"Having used several kinds of automatic refrigeration in apartment houses, I feel that my present Servel Electrolux gas refrigerator is the perfect refrigerator, due to its silence, sturdy beauty, fast freezing and absolute dependability." *Mrs. A. C. Ford, 742 S. W. Vista, Portland, Ore.*



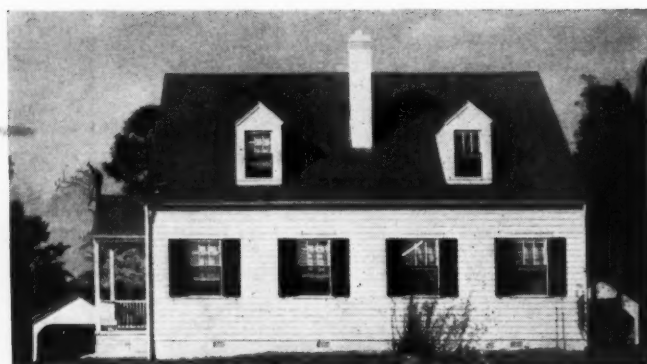
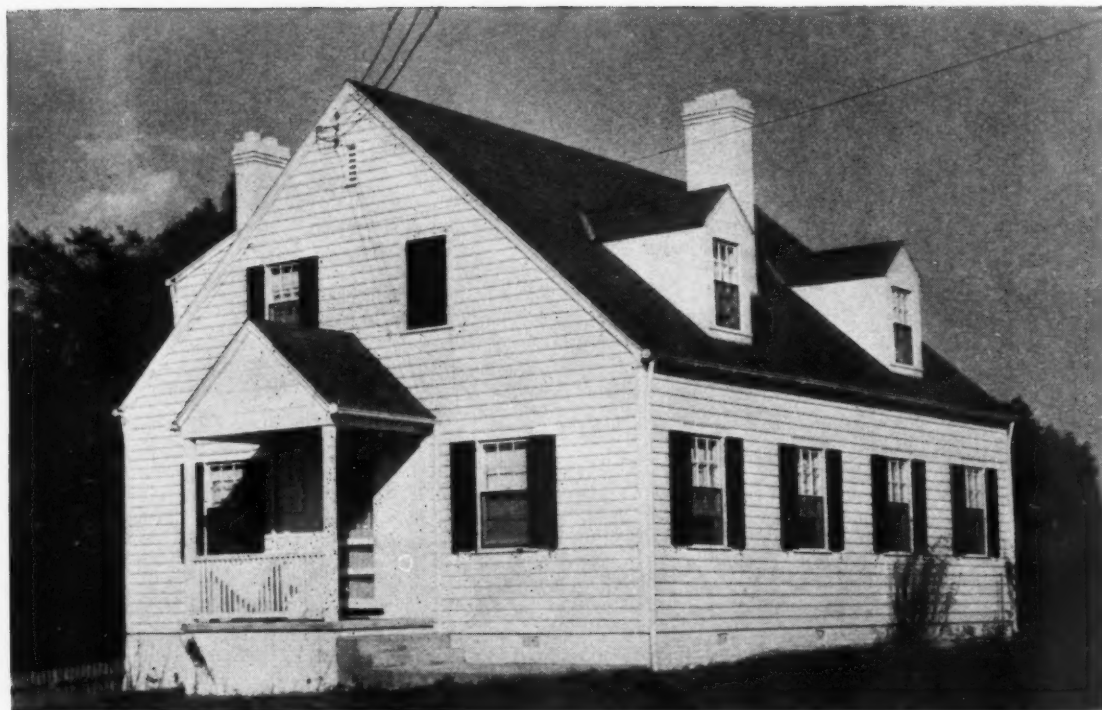
Different...

FROM ALL OTHERS:

- NO MOVING PARTS TO WEAR
in its freezing system
- PERMANENT SILENCE
- CONTINUED LOW OPERATING COST
- MORE YEARS OF DEPENDABLE SERVICE
- SAVINGS THAT PAY FOR IT



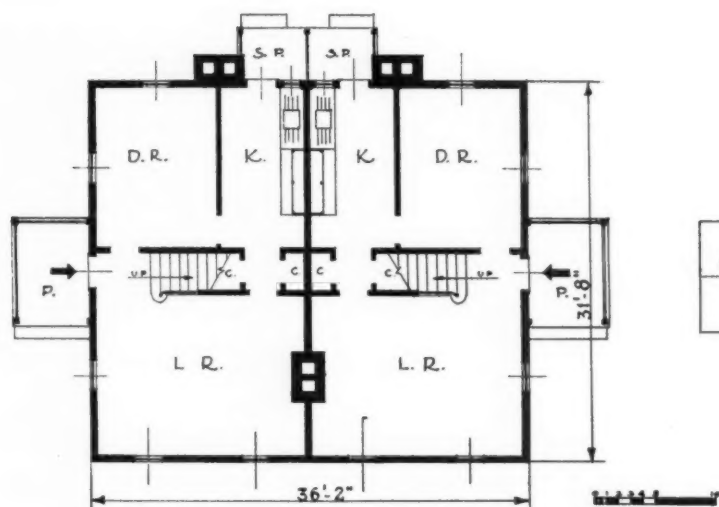
SPECIFY THE REFRIGERATOR THEY HEAR ABOUT · BUT NEVER HEAR



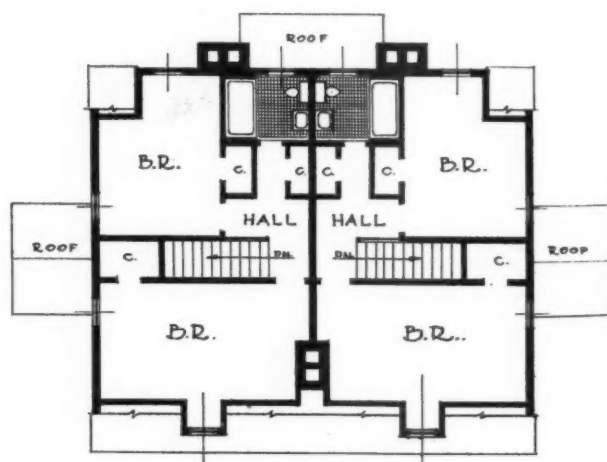
THE ABOVE front and end views of the Virginia duplex show how simple and attractively it was designed, with each family having its own entrance at the sides. It is several miles from nearest town.

Duplex House in the Country

LOCATED on a country road near the village of Franklin, Va., this duplex house is unusually well built and laid out. The contractor was W. H. Scott of Franklin, and the architect, T. David Fitz-Gibbon of Norfolk. With a cubage of 24,610 cu. ft., it provides two 5-room apartments with private side and rear entrances. It has an asbestos shingle roof and mineral wool insulation was used throughout.



FIRST FLOOR PLAN



SECOND FLOOR PLAN

DUPLEX PLAN, only 36' 2" x 31' 8", provides living room, dining room and kitchen downstairs, 2 bedrooms and bath upstairs, with good cross ventilation and lighting, no waste space. Each has side and rear entrances. T. David Fitz-Gibbon of Norfolk is the architect.



The manufacturers of Janitrol gas-fired winter air conditioning equipment will have important news for all builders in the March issue of *American Builder*.

Surface Combustion Corporation
TOLEDO OHIO



CLEARVIEW Terrace, built by Lon Campbell in Asheville, N. C., provides compact, 4-room apartments for four families.

4-Unit Colonial Cottage-Type Apartment

Proves Big Success in Asheville, N. C.

LON L. CAMPBELL of Asheville, N. C., planned and built these cottage-type apartments as an investment, and they have proved thoroughly satisfactory, having paid more than 8 per cent after making generous allowances for vacancies, repairs and depreciation.

The 4 apartments illustrated in detail on pages 94, 96, and 98 have a floor area of approximately 630 sq. ft. each, and the owner has a waiting list of tenants anxious to pay \$40 a month or more.

While these are small 4-room apartments, Builder Campbell and his architect, Henry Irven Gaines of Asheville,

have planned them to fit the taste of today's tenant. The living rooms are large—approximately 20' x 11½'. Bedrooms are small and to increase the livable space, some of the rooms do double-duty, such as the "state room," which is equipped with a Pullman bed.

The little cottage apartments are connected by covered porches and trellises and have a surprising amount of privacy, which is secured by the judicious placing of doors and windows so that it is impossible for anyone standing at any one point in one house to see into another. Each has its own front and rear entrance.

The first group of 4 apartments illustrated with this



COTTAGE apartments are attractively grouped around a court on a plot 120' x 427'. Each apartment has 630 sq. ft. of floor area, rents for \$40 per month. Plans and elevations are shown on page 96; interiors on page 98.

For the **BIGGEST**
of the **4 BIG JOBS—**
install **HOTSTREAM**
GAS
WATER HEATERS



HOTSTREAM Automatic Water Heaters give the homes you build that extra sales appeal that clinches the sale.

Engineered for Service—Styled for Beauty

Inasmuch as Gas is best for water heating why not decide on the automatic water heater with the greatest "eye-appeal" and "buy appeal"? HOTSTREAM has it and your prospects know it. Hotstream is tops for efficient, economical and dependable service. Smart styling sells the buyer on sight.

These 3 Models are Featured in American Builder

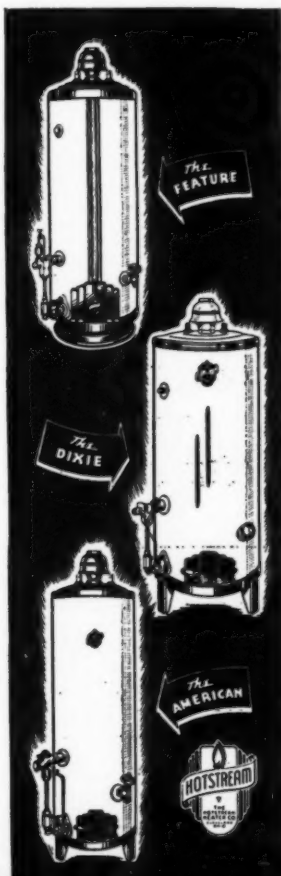
While Hotstream offers the "Most Complete Line of Water Heaters in America," these 3 models will satisfy 95% of your requirements.

- The **"Feature"**
with a **20-Year Guarantee**
The exclusive features and tailor-made design make the "Feature" first choice of "upper bracket" buyers. (See installation in feature section.)

- The **"Dixie"**
with a **10-Year Guarantee**
Its medium price, plus the features that put it into the "best heater" class are factors in making this the fastest selling automatic. (See installation in feature section.)

- The **"American"** . . .
with a **5-Year Guarantee**
Here is Hotstream's answer to the need for an "extra-value" heater at a price which definitely takes care of price competition. (See installation in feature section.)

Write today for the new Hotstream Catalog No. 40, the only book available in the industry giving you all the information you need about water heating, plus illustrations, specifications, and prices on "The Most Complete Line in America."



THE HOTSTREAM HEATER COMPANY
8007 GRAND AVENUE • CLEVELAND, OHIO

Says One Builder to Another
in speaking of
NIAGARA
GAS-FIRED FURNACES

The Wm. J. Mitchell Organization, Inc.
CLEVELAND'S LARGEST HOME BUILDERS
13039 LORAIN AVE. • 11 CLEARWATER BLDG.
CLEVELAND OHIO
April 5, 1939

INSURANCE
RENTALS
MORTGAGE LOANS

The Forest City Foundries Company,
2500 West 27th Street,
Cleveland, Ohio.

Gentlemen:
Our business is building homes and we believe you will be interested in our experience with the Niagara gas-fired furnaces we have installed.

We have installed many Niagara Model 20 gas-fired furnace units in homes of the type shown by the accompanying photographs. We found a warm reception for the Niagara furnace in this territory. The people who inspected our homes expressed favorable opinions on the neatness of the Niagara units. They were also impressed by the fact that a gas burning unit provides automatic regulation of heat and not only eliminates the dirt and muss of coal heat, but also saves the housewife much manual work by eliminating the necessity of furnace firing, carrying out ashes and so forth.

Last month we checked on all of the units we installed in 1938 and found that in every instance owners were well satisfied, in fact elated, with their gas-fired Niagara furnaces. Not one person complained of fuel cost and all stated that such costs were considerably lower than they had anticipated.

We commend you on the improved appearance of your new models and assure you that we shall be glad to continue the use of Niagara gas-fired furnaces.

Very truly yours,
Wm. J. Mitchell Organization, Inc.

C. N. Mitchell, Secretary



**Contract... Operative...
Speculative Builders
and Home Owners**

Appreciate these Niagara Series 20 Features

- Into the compact Niagara Series 20 air conditioning and gravity gas-fired units have been packed beauty, convenience and efficiency heretofore available only in deluxe equipment. Casings and hoods are beautifully designed and attractively finished in smooth Hammerloid green and grey enamel to blend with the most modern furnace room.

Operation of the unit is entirely automatic. Light the gas burner, set the thermostat at the desired temperature, and "furnace firing" for the season is ended. Gas is automatically turned off and on, according to temperature requirements.

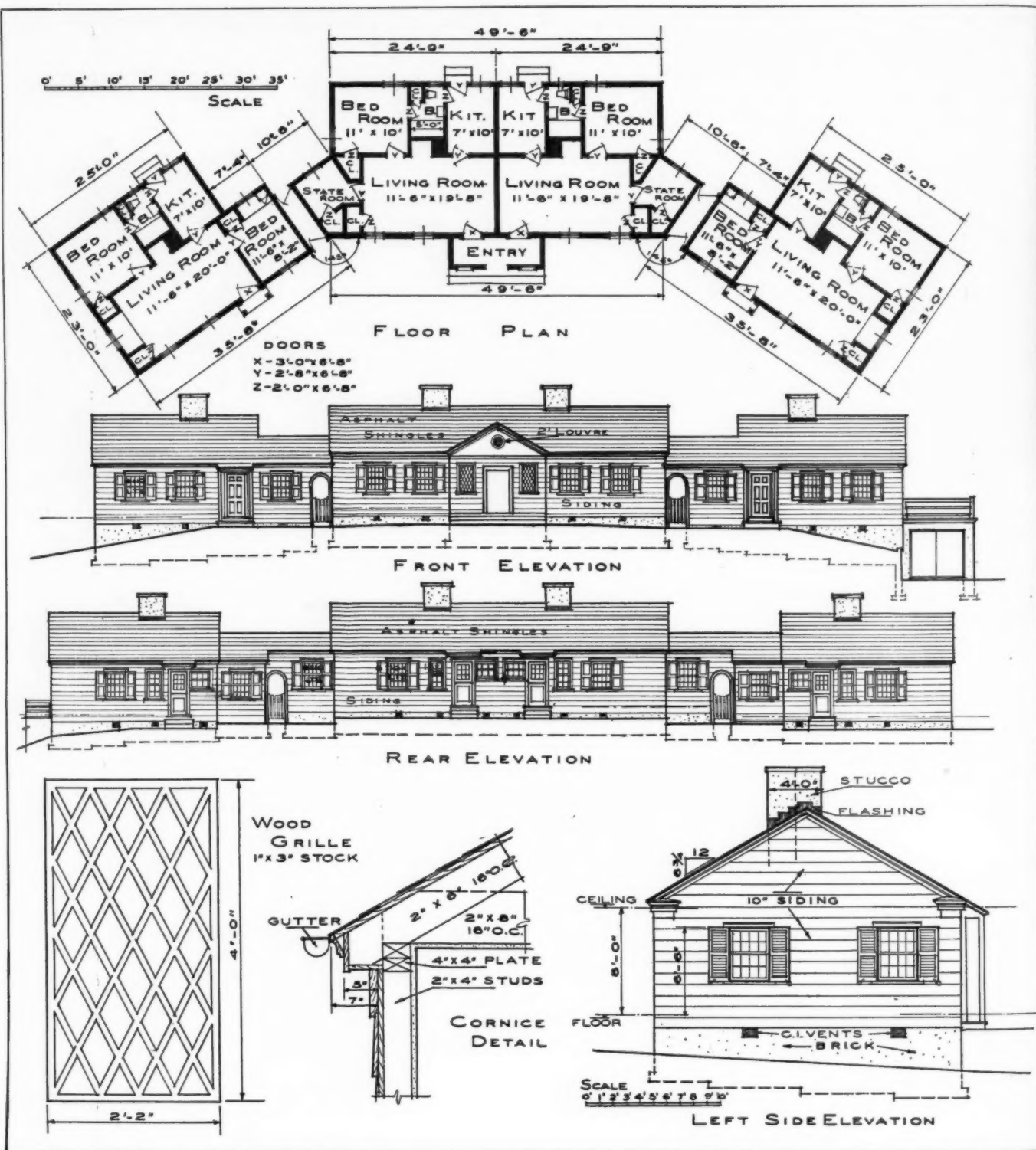
Life-time efficiency of the combustion chamber is assured by copper chrome cast iron alloy construction and scientific design. The long, deep corrugated walls of the heat exchanger provide maximum contact surface for whirling hot gasses. The result is higher temperatures with lower fuel consumption and low gas bills. Permanent tightness of copper chrome iron alloy combustion chamber and cast iron radiating section is maintained by asbestos wick-sealing and double lap and groove joint cementing fully approved by the National Board of Fire Underwriters.

You are invited to write for complete information on Niagara Furnaces—gas, coal, oil—built for home owners who want modern equipment at reasonable cost.

THE FOREST CITY FOUNDRIES COMPANY

2500 W. 27th ST. • CLEVELAND, OHIO

1890 Golden Anniversary Year 1940



PLANS of Clearview Terrace, by Architect Henry Irven Gaines, show not only attractive detailing of exterior but economical floor plan arrangement. There are four apartments, each having 4 rooms, but through use of a "state room" and Pullman bed, provide 6-room efficiency.

article has been so successful that Campbell has gone ahead with additional units and will eventually have some 16 or 18 apartments laid out in groups on terraces on his 2-acre hillside property. The Colonial theme is being skillfully maintained through use of trellises, lattice-work, decorative fences, picket gates, terraces and cottage landscaping.

Economy in Group Building

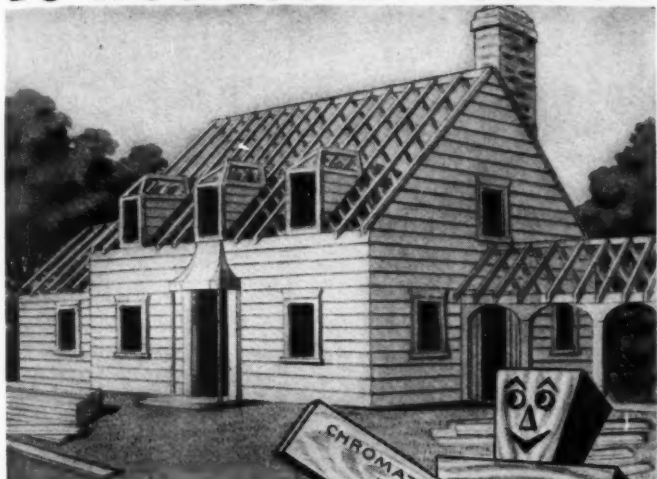
The building of cottage apartments of this kind in a small group results in very important economies, according to the builder. A saving of more than 15 per

cent over building them as separate houses is claimed. The economies listed include:

1. No building space taken up by halls, stairways and common passage ways, as in the usual city apartment.
2. Shorter lateral runs for water and sewage than in houses individually located.
3. Fewer sewer and water service connections.
4. Less electrical conduit and gas pipe.
5. Better utilization of land space.
6. Grading and landscaping with the necessary walks, steps, etc., materially reduced.

Construction is of frame, 1-story cottage type, with

ADD MORE DURABILITY TO WOOD CONSTRUCTION



Use



Chromated Zinc Chloride

PRESERVED LUMBER

• For only a small additional cost you can protect your buildings against decay and termite damage for the normal life of the investment.

Lumber treated with DU PONT Chromated Zinc Chloride lasts 3 to 5 times longer than ordinary wood because it is resistant to decay and repellent to termites. This lumber is especially suited for construction as it is also fire retarding, clean, odorless, paintable and readily fabricated.

Consider the advantages of using lumber preserved with DU PONT Chromated Zinc Chloride. Write for literature and sources of supply.

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
GRASSELLI CHEMICALS DEPARTMENT
WILMINGTON  DELAWARE

RIGHT!

IN PRINCIPLE
AND
PERFORMANCE



PEERLESS

GAS-FIRED FLOOR FURNACES

Gas for heating has special advantages. The Peerless Gas-Fired Furnace is scientifically designed to economically make the best use of all the advantages of gas heat. Requires no basement—saves space. Clean, safe, automatic heat. Can be equipped with Peerless Safety Pilot and Built-in Thermostat. Ideal for small homes.

Other Peerless Products include Gas-Fired Radiant Heaters, Circulators, Wall Heaters, Dome Dampers, Garbage Receivers, Coal Windows, Ash Dumps and Ashpit Doors. Fireplace Fixtures.

PEERLESS MFG. CORP.

Incorporated

Louisville

Kentucky



LIVING rooms of Clearview Terrace apartments are 20' x 11½', with Carolina knotty spruce walls, beveled insulating board ceiling. Alcove at end may hold built-in couch.



FULLY equipped kitchen, left, and double-duty "state room," at right showing Pullman type seats that change to bed at night.

2 x 10 floor joists, beveled siding exterior. Houses are thoroughly insulated.

An example of double-duty space utilization is the "state room," approximately 8' x 10', which is used as breakfast or lunch room, serving, lounging or card room, or as a reading room or child's study or private bedroom. Spring cushion seats have been built-in, Pullman fashion, with removable table between. Above the seats are built-in bookcases. The closet has a full mirror door. By the pulling of a lever the Pullman seats fold down into a double, comfortable bed.

Equipment and specifications include the following:

HEATING AND AIR CONDITIONING—General Electric forced warm air oil burning unit, with plenum chamber above and hot air ducts to each room.

KITCHEN—60' of shelving in addition to drawers, work table and closet space, built-in garbage disposal space with outside removal, Electrolux refrigerator, Crane sink.

COPPER—Chase Copper and Brass Co. hot water pipes and flashing.

PULLMAN BED—Built-in Pullman bed in "state room" by Trailer Mfg. Co.

INSULATION—4" Johns-Manville rock wool in outside walls and ceiling. Nu-Way copper weatherstripping at doors.

WINDOWS—Curtis Silentite windows with Libbey-Owens-Ford A-quality glass.

INTERIOR WALLS—Carolina knotty spruce and Masonite wallboard. Monotile wallboard, Standard Wall Covering Co., in kitchen and bath.

WOODWORK—Cabinets, doors and interior trim, Curtis Co., white pine.

HARDWARE—Finish hardware by Lockwood Hardware Co.

BATHROOM—Crane Co. fixtures, Church seat, Miami metal cabinets.

PAINTING—Devoe & Raynolds casein paint over Masonite walls and ceilings.

FLOORS—Pratt & Lambert filler, varnish and wax.

EXTERIOR—3 coats lead and oil paint, Devoe & Raynolds.

ROOFING—2 x 6 rafters, Johns-Manville asphalt shingles.

WARM AIR GRILLES—Pressed steel by Tuttle & Bailey.

Introducing

PLAIN COLORS IN LINOWALL
the linoleum-like wall covering

HERE IS ANOTHER
ARMSTRONG FIRST

Now, for the first time, plain colors are available in a linoleum-like wall covering. Armstrong presents six new plain tones of Linowall—Foam White, Pale Jade, Rose Coral, Dawn Gray, Daisy Yellow, and Light Azure.

These colors, created at the request of numerous architects and designers, meet a need for the solid effects so widely used in modern interior decoration. They open new decorative possibilities to you and greatly extend the range of usefulness of this washable wall covering.

In addition to these pastels, Armstrong offers Linowall in three new dark colors that are ideal for wainscotings in public and semi-public buildings where service is severe. These colors are Verde Antique, Sienna Red, and Mountain Blue.

For complete details on Linowall—available in 30 plain, tile, marble, and wood effects and costing only half as much as other permanent wall coverings—let us send you our color-illustrated, file-sized book, "Decorative Walls of Enduring Beauty." Specification data on Linowall will be found in *Sweet's*.

Write immediately to Armstrong Cork Company, Floor Division, 1218 State Street, Lancaster, Pennsylvania.



Armstrong's LINOWALL

Made by the makers of Armstrong's Linoleum



BIG PROFITS

Here's your chance to make some big money—be your own boss and get into something for yourself. There is no reason why you should not be a big success in the floor surfacing business—you already know a lot about the building game, so you naturally have a head start on the other fellow.

EFFICIENT ONE-MAN MACHINE

The time saving, money-making new American high-speed Standard floor sander is easy to run—no skill is required to operate and within a few hours you can run one as well as an "old timer." American floor sanders are easy to take from job to job. You don't need any helpers.

SEND COUPON

Be sure to sign and mail coupon below and get complete details and prices without cost or obligation. It costs you nothing to investigate. So, if you are in a rut, now is the time to get out and become independent—have your own American Method floor surfacing business.

AMERICAN FLOOR SURFACING MACHINE COMPANY

511 SO. ST. CLAIR ST.

TOLEDO, OHIO

Gentlemen:

Send complete details and prices without cost.

- ☐ I want to go into floor surfacing business.
☐ I would use sander in my contracting business.

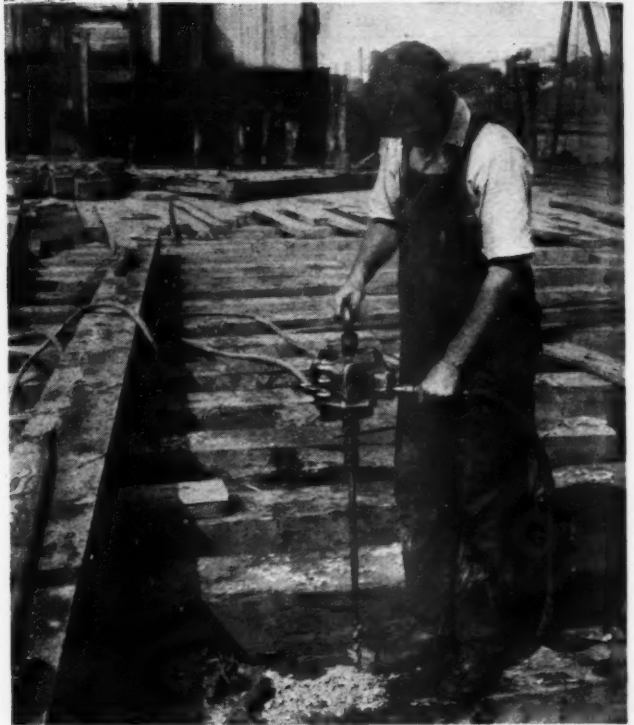
Name _____

Street _____

City _____ State _____



FAST CUTTING done with Safety air saw.



AIR-POWERED wood borer speeds through 12" x 12" timbers.

Speed Work with Compressed Air

Increasing Opportunities Seen in Light-Load-Bearing Field



PNEUMATIC vibrator used in vibrating cement to produce a denser mix and assure the complete filling of the forms.

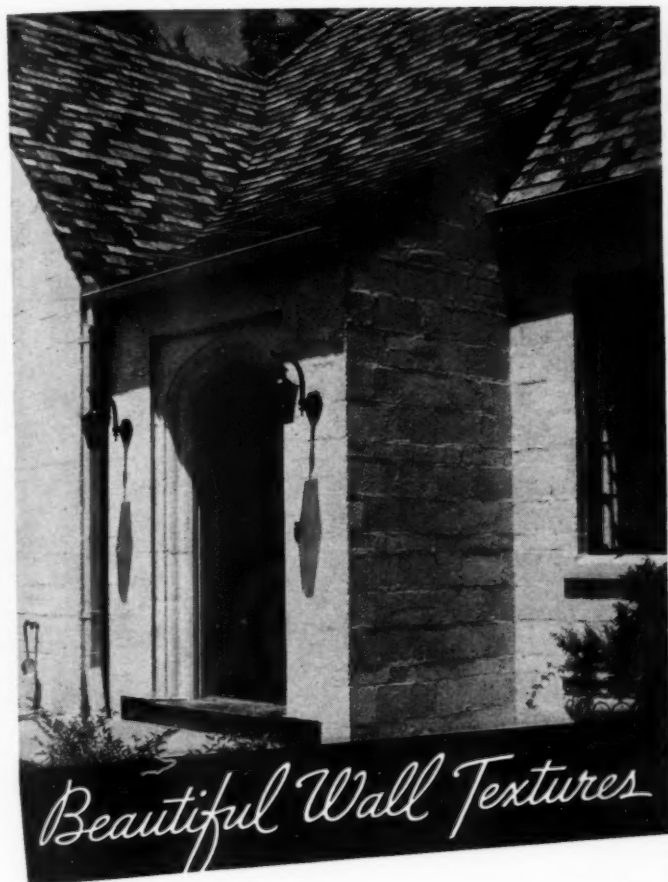
ONE of the first thoughts of the contractor who bids on a large tunnel, a road job, a bridge, or a skyscraper is the installation of his compressed air plant, and his estimates are based on what can be done with the use of compressed air-operated tools. Without them his bid would be prohibitive.

The use of compressed air tools, however, is not confined to jobs of national importance such as those mentioned, and few of us have not stopped on the corner to watch a small portable air compressor and a man with a paving breaker taking up a small piece of pavement no more than 6 feet long by 2 feet wide. Such portable air compressors are kept available at all times by public utility companies and small contractors and sent out on even the smallest of jobs because it is cheaper and quicker to do the work with compressed air than it is to do it by hand.

While the use of compressed air and compressed air equipment is not so extensive in residential building and the light-load-bearing field, there is a growing acceptance of these products as a means of speeding up the job and bringing about the lower costs so widely desired. Cost studies indicate that the scientific and intelligent use of compressed air equipment by building contractors in the residential and light-load-bearing field may bring about just as important economies and time-saving results as in the heavier works field.

In residential building there are a host of operations that can be performed more economically with compressed air equipment, including sawing, digging, drilling, boring, painting and vibrating concrete. The use of a small portable compressor makes all these operations possible and profitable in residential work.

Starting from the digging of the cellar and following

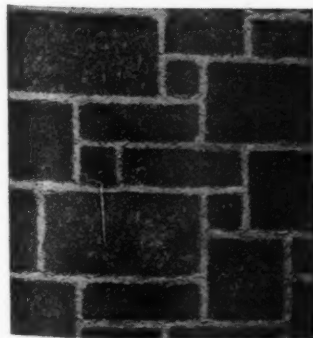


in wide variety . . . one reason for the sales appeal of

CONCRETE Homes



Board-marked reinforced concrete wall



Concrete masonry—one of many ashlar patterns. (See also top of page)

If you are looking for sales-making eye-appeal, consider Concrete! The wide choice of attractive textures and patterns obtainable with concrete masonry and reinforced concrete, will help you give variety and distinction to your homes.

CONCRETE HOMES ALSO ARE

- Firesafe.
- More comfortable and dry in all weather.
- Resistant to dampness, termites.
- Free from sagging walls and other costly, annoying faults, as only a rigidly built home can be.
- BETTER VALUES! Concrete construction means little or no higher price tag—less cost to owner in the long run, thanks to low maintenance and high resale value.

Over 45,000 new concrete homes built in past 4 years, and you'll see more and more of them. Proof that people want concrete. Write for additional facts.

PORTLAND CEMENT ASSOCIATION
Dept. 2-3, 33 W. Grand Ave., Chicago, Ill.

PREFERRED FOR
20 YEARS . . .

SKILSAW

LEADS THE FIELD BECAUSE
IT LEADS IN PERFORMANCE!

MAKE no mistake—there is no other portable electric saw like SKILSAW! It out-cuts all others under heavy load. It is lighter, easier to use. It saws faster and deeper on any kind of cut . . . it's better in every way . . . because it represents 20 years of constant improvement on the first portable electric saw, introduced by us in 1920!

Buy a SKILSAW and you'll take the short road to profits—it will save half the sawing time and cost on ALL your jobs, will help bring more jobs to you! Cuts wood, metal, stone and compositions. 9 POWERFUL SIZES.

SKILSAW, INC.

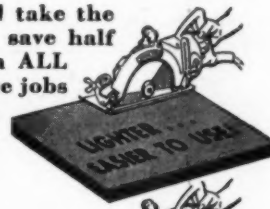
5031 ELSTON AVENUE, CHICAGO

38 East 22nd St., New York • 182 Main St., Buffalo • 52 Brookline Ave., Boston • 15 S. 21st St., Philadelphia • 2124 Main St., Dallas • 918 Union Street, New Orleans • 1253 South Flower Street, Los Angeles • 2065 Webster Street, Oakland • 29 North Ave., N.W., Atlanta • Canadian Branch: 85 Deloraine Ave., Toronto •

FREE BOOK!

Shows how even small homes can be built well for less with SKILSAW.

Send for it today!



SKILSAW

SAWS • BELT SANDERS • GRINDERS • BLOWERS
DRILLS • DISC SANDERS • FLOOR SANDERS

PORTABLE ELECTRIC TOOLS

SEE YOUR DISTRIBUTOR . . . he will gladly demonstrate how SKILSAW TOOLS will save you money



PAVING BREAKER rips up concrete.



COMPRESSED air jackhammer breaks up unwieldy "niggerhead."

through the construction of the ordinary residence the tools listed below are available without change or with very little adaptation for the contractor's use:

1. Pneumatically operated double-drum scraper hoists can be used for the general excavation work.

2. When boulders are encountered the rock drill is available to drill blast holes in a few minutes and thus perhaps save hours in removing them.

3. For trimming and squaring the excavation, clay spades can be used.

4. For breaking up hard pan, the familiar paving breaker is ideal.

5. Should the excavation be flooded by heavy rains, as often happens, a pneumatically operated sump pump will clear it in a few minutes.

6. When refilling of sewer trenches and around cellar walls is done the pneumatic back-fill tamper should be used to prevent unsightly settlement later.

7. If elaborate masonry work is to be done, stone-cutting tools are available.

8. Wherever concrete is to be poured, pneumatic vibrators are available and should be used.

9. Pneumatic saws are fully developed and available.

10. Pneumatic wood borers are available.

11. A pneumatic wood plane has been developed and put on the market.

12. Pneumatic hoists suitable for raising timbers, bricks, or any heavy material are available in all sizes.

13. Where surfaces have to be cleaned preparatory to the application of stucco, the pneumatic sand blast and pneumatically operated wire brushes are available.

14. When holes for wiring or piping have to be put through masonry walls the light pneumatic rock drill is hours ahead of any other method.

(Continued to page 125)



AIR POWERED grinders used for finishing granite.



CONCRETE SURFACER (at left) operated by compressed air used on Indiana school. AT RIGHT, pneumatic clay digger speeds difficult digging.



QUICKER SALES LARGER PROFITS



when your
customers can distinguish between
"jimcracks" and true value

When your customer has a tendency to buy on "eye-value" rather than real structural worth, you can use the booklet *How to Buy a Better Home* to advantage.

How to Buy a Better Home is valuable to you because it tells your story—"that good houses can be bought as well as built." It sets up the operative builder as the man who can usually deliver more house for the money, with less trouble, because he is a combination of all building factors.

As a "clincher" it contains a 12-page check list that you can use with your customers to compare value—to show the home-owners-to-be the true difference between "jimcracks" and value.

BETTER HOMES & GARDENS believes that *How to Buy a Better Home* can be one of your most powerful sales tools. If you haven't a copy we'll gladly send you one, free of charge. And we'll include suggestions for using it, which will help you make *quicker sales and larger profits*. The coupon below will bring your copy.

Better Homes & Gardens

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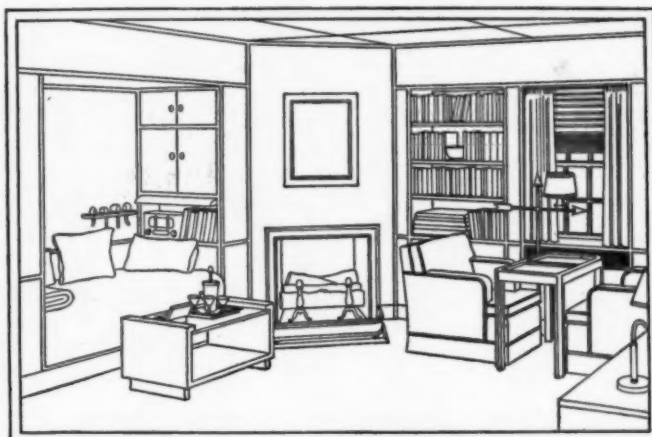
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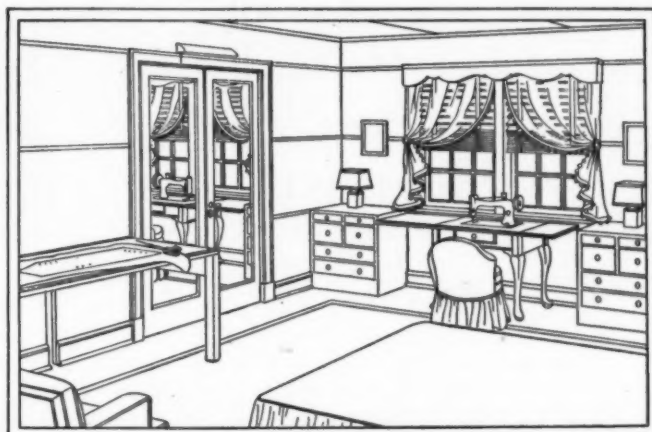
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Note these modern applications of Masonite Tempered Presdwood



A cozy den can be executed at little cost when Masonite Tempered Presdwood is applied over structural insulation to form the walls and ceiling. Built-in sofa is an interesting feature . . . easy to include with Tempered Presdwood.



A dual-purpose room—sewing-room by day—guest-room by night. The Tempered Presdwood walls are grooved with a modern horizontal pattern and can be painted to suit the client's taste. The Tempered Presdwood cutting-table is built-in and folds into the wall when not in use.

Millions of home-owners will see the new-home and remodeling ideas outlined on this page in Masonite's national advertising, appearing during March. We will gladly send you a free sample of Masonite Tempered Presdwood so that you can examine it closely. The coupon is for your convenience.



MASONITE TEMPERED PRESDWOOD

The Wonder Wood of a Thousand Uses • Sold by Lumber Dealers Everywhere

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MASONITE CORPORATION, Dept. AB-6
111 W. Washington St., Chicago, Ill.

Please send me, without cost or obligation, free sample and full
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THE *Real* COST OF BUILDING PAPER IS . . .

THE APPLIED COST



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SISALKRAFT

ITS applied cost is LOW. There's no time lost patching tears and punctures . . . no waste — no worry. Sisalkraft is *tough*. It goes on faster . . . can be yanked around corners — handled by one man alone, even in a heavy wind. No batten strips — just roofing nails. These factors cut the *applied* cost of Sisalkraft to the level of even the flimsiest papers. Make this one "best" building paper your standard on every job. It will pay you.

A TIGHTER BUILDING . . . GREATER SATISFACTION

Sisalkraft over all sheathing seals the structure against infiltration of moisture, air and dust. It won't deteriorate in the wall and helps avoid damage caused by construction cracks.

It's a material of MANY uses — for protecting and curing concrete floors — flashing window and door openings—temporary partitions and closures — protecting materials on the job.

Get better acquainted with Sisalkraft. Ask your lumber dealer for demonstration samples and detailed literature — or write us.

The SISALKRAFT Co.

205 W. WACKER DRIVE
New York

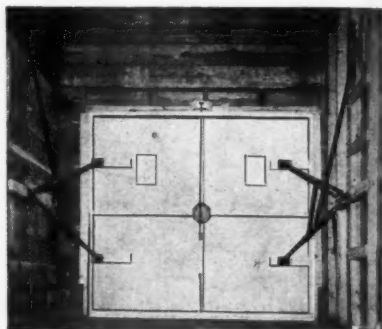
CHICAGO, ILLINOIS
San Francisco



New Products for Building More House for the Money

One-Piece Upward-Acting Garage Door

THE Strand door, manufactured by Strand Building Products Co., Detroit, offers appreciated convenience in design and performance of upward-acting doors for single and double garages. This handsome, modern unit is perfectly balanced to open or close at a finger touch. The simple mechanism has only two moving parts; each door is equipped with an automobile type lock. The doors themselves are of laminated construction built up of hot plate resin-bonded plywood to eliminate the effects of weather, and provide a base for any type finish desired. Weatherstrips are supplied for the sides. The doors are furnished in standard sizes 15'-8" x 7', 14'-10-5/8" x 7', 14'-1 1/4" x 7' for double garages, and 7'-10" x 7' for single garages.



UPPER view, Strand garage door is lowered by convenient rope pull. Lower, view of closed position.

Standard Hydraulic Door Operator

ALOW cost door operator, for use on residential garage and other doors, is being manufactured by Caltemp Co., 1001 East First St., Los Angeles. This device makes it possible to open and close, also lock and unlock, the garage door without getting out of the car.

The unit is operated by remote control from a steel post at the edge of the driveway, and from within the garage; other control stations may be located as desired. The control included as standard equipment is a simple mechanical one, but any type of electric control may be used.

Features of this hydraulic unit are: Only one moving part aside from controls; simple to install; operates silently; no oiling is ever required; and, it is motivated by the city water pressure and has been developed for use in any climate.



UNLOCKING garage at post beside drive operates door.

STANLEY SCREW DRIVERS

(Alloy Steel)

Built To Last!

TRADE **STANLEY** MARK



No. 20 Stanley "Hurwood" Screw Driver. Forged alloy steel blade goes all the way through handle and is locked in place by two projecting wings and a rivet through ferrule, handle and blade. A popular driver for all-around work. Also made with cabinet blades.

No. 25 Stanley "Hurwood" with Bolster Type construction. Four wings on bolster lock blade in handle. Alloy steel blade is tempered its entire length. Handles are deeply fluted for a good grip. A rugged, high-quality driver for general or electrical work. Also made with cabinet blades and narrow blades.

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DIVISION OF THE STANLEY WORKS

New Britain, Conn.

Cross-ground tips hold in screw slots. Handles properly shaped for good grip. Specially heat treated tips and blades.

Send for No. 34 Catalog showing all Stanley Tools.

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TAKE AN INEXPENSIVE softwood—Douglas Fir plywood or pine—add WHITE REZ—simply paint it on and wipe it and you have a surface with the appearance and smooth, even finish of the finest hardwood panels. Under stain—these panels take on the luxurious quality of walnuts, teaks and mahoganies. Bleached—they assume the warm honey-tones of satin-wood and maple. You'll want to know more about this revolutionary discovery of Laucks' research chemists. Get the whole story of White Rez today! A post-card will bring it to you.

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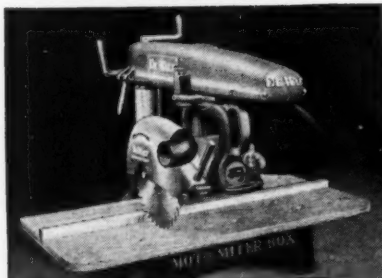
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versatile "all-purpose"

WOOD-WORKING MACHINES

From $\frac{1}{2}$ H. P.
to 15 H. P.

Every Machine Performs
over 50
Different Operations!

for 1 inch, MODEL GS



Cuts building costs Speeds up jobs

Here's the complete line of world-famous DeWalt wood-workers . . . "all-purpose" wood-working tools that speed up building, cut costs 20% to 30%!

DeWalt woodworkers make all known saw-cuts. They do all your dadoing, tenoning, shaping, boring, grinding, routing, drilling, sanding. Each machine is capable of 50 different operations...is actually, several machines in one. Extremely flexible . . . DeWalts are easy to operate, require only a few seconds to change over. Most models are easily portable.

Let a DeWalt go to work on your building jobs...save money for you! Or, if you know of an experienced man in the art of woodworking *who has proved sales ability*, we are interested in such men.

DeWalt Talking Movie

Standard 16 mm. film. Tells factual, interesting story of DeWalt operation and versatility. Available for showing. Write for details.

INVESTIGATE! Mail the coupon today!

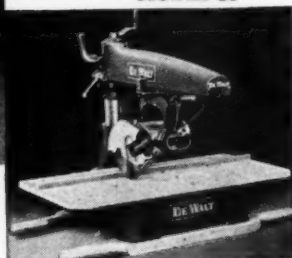
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428 Fountain Avenue, Lancaster, Pennsylvania

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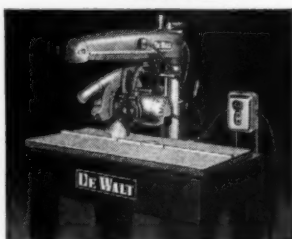
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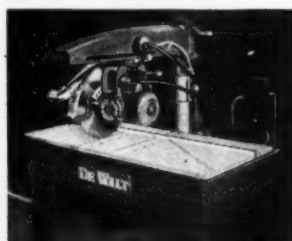
for 2 inches
MODEL GP



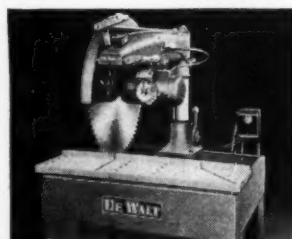
for 3 inches
MODEL GK



for 4 inches
MODEL GE

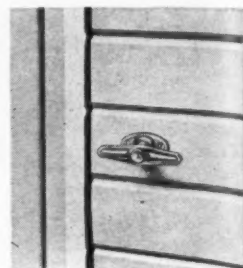


for 6 inches, up to
12 inches
MODEL GL



New Lock with Garage Door Hardware

THE Frantz Manufacturing Co., Sterling, Ill., announces that a chromium-finished automobile type handle-lock is now being supplied as regular equipment with "Junior Over-the-Top" door equipment. Catches on both side jambs (inside) engage as the door reaches the fully closed position. Thus, a turn of the key precludes any possibility of forcing entrance. Unlocked, a slight turn of the handle releases both catches. This door equipment features modern styling for beauty and chromium plating for a permanent finish.



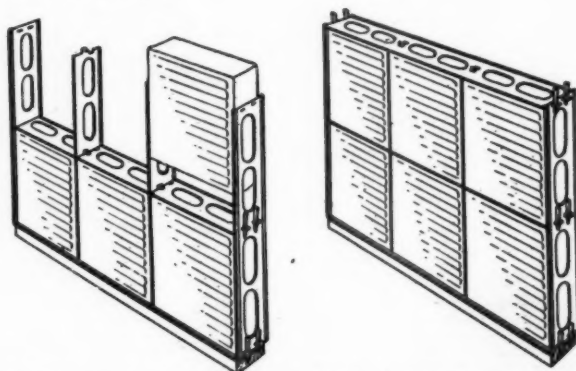
HANDLE-LOCK of automobile type available as garage hardware equipment.

New Method of Glass Block Construction

A NEW method for using prefabricated and interlocking metal members for glass block construction has been developed by Revere Copper and Brass Incorporated, New York City. The metal members, completely prefabricated from architectural bronze and aluminum alloy extruded shapes, provide a strong, self-aligning framework enclosing and securing each glass block into a rigid, integral, almost monolithic panel unit.

The Revere system consists primarily of two extruded shapes. One is designed and fabricated as a perimeter shape for the top, bottom and sides of a panel. One side of this shape has a profile that fits the sides of the block, while the other side is designed for connecting the glass block panel to adjacent construction. The other shape has both sides designed to fit the sides of the block and is used in continuous horizontal lengths and short vertical lengths between each course of block. Hooks on the ends of the short verticals interlock with "L" shaped holes in the continuous horizontals which are, in turn, interlocked with the perimeter members by means of tenons, mortice slots and wedge keys.

Two sizes of glass block can be erected by this method. For 8" x 8" blocks, the members provide for construction up to 18 blocks wide and 18 blocks high. For 12" x 12" blocks, the maximum is 12 blocks wide and 12 blocks high, but in both cases, there is provision for longer walls by joining panels together in straight line or at angles. No provision is made for curved construction or for 6" x 6" block.



METAL members interlock glass blocks into single panel unit.

Sound Quieting Kitchen Ceilings

WHAT promises to be a new trend in the building field is the process of treating kitchen ceilings with sound quieting materials that absorb the sounds of rattling dishes, pots, and pans. A typical example of this recent development is seen in the accompanying illustration of the acoustically treated kitchen ceiling in Celotex House No. 17 exhibited at the New York World's Fair.

The acoustical material can be readily installed over plaster, concrete, building board, wood, or metal surfaces—by (1) mastic, or acoustical adhesives, (2) on wood strips, and (3) on special suspension system.

The most inexpensive method of installation is by mastics, or acoustical adhesives; and this method is generally used in remodelling old construction. On plaster ceilings, the material is usually cemented and nailed directly to the plaster. If desired, it may be applied with a heavy bodied adhesive alone to the plaster

or flat concrete surfaces. Approved acoustical cements that have been found most satisfactory for use with this type of material include: Celotex adhesives, manufactured by the Celotex Corp., Chicago; Clinco, manufactured by the Clinton Co., Chicago; Acoustic, manufactured by the Atlas Supply Co., Manayunk, Pa.; Hetzels' Cement, manufactured by the Hetzel Roofing Co., Newark, N.J.; and Webster's Cement, manufactured by the Webster Co., Cambridge, Mass.

In new construction, the wood strip installation method is cheaper as it is possible to use the product without plaster or lath. The material may be applied by nailing it to 1 by 3 inches soft wood furring strips spaced 12 inches on centers as detailed below, or in accordance with the requirements of the design.

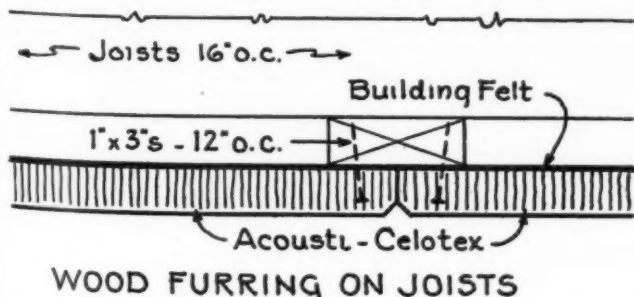
On concrete or brick areas, the first course of strips may be spaced not over 36 inches on centers, then cross stripped 12 inches on centers, strips to be attached to slab by suitable expansion bolts, inserts, or wire ties spaced at 30-inch intervals or less.

The special suspension system is used in a manner similar to wood strips, but is more costly because metal is generally used. However, whether it is new or old construction, it has been found that the best acoustical results are obtained as a rule when the ceiling or walls have been plastered and lathed, and the sound deadening material is applied with mastic.

The thickness of the perforated cane fiber material used in the accompanying illustration varies from $\frac{1}{2}$ " to $1\frac{1}{4}$ ", and selection depends upon the amount of sound-deadening results desired. The size of the tile-like units vary from 6" x 12" through 12" x 12" to 12" x 24". In domestic use, such as kitchens, $\frac{1}{2}$ " thickness is considered adequate for proper sound conditioning. The cost of applying this sound conditioning product to kitchens fluctuates between 30c and 50c a square foot depending on labor and finish.

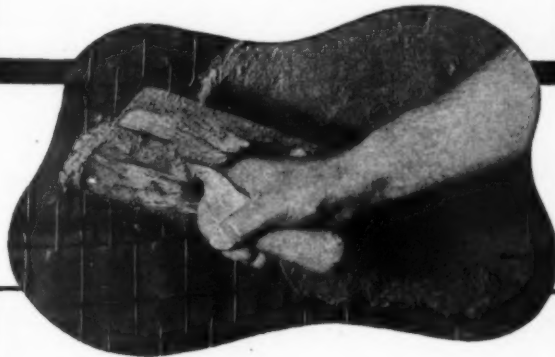


ACOUSTICAL material applied as detailed below quiets kitchen.



HOW TO GET A

Better Plastering Job AND MAKE GREATER PROFITS



Check these advantages of THE NEW IMPROVED J-M STEELTEX

- 1** "Reinforced-Concrete" Principle. Steel-wire mesh is embedded in the plaster, providing reinforcement... assuring maximum protection against plaster cracking.
- 2** "Truss-Action" Rigidity. Steeltex is board-like in rigidity. It is easy to handle and work... assures minimum deflection under pressure of the trowel.
- 3** Instant Bond. Wet mortar bonds instantly with the specially designed fibrous backing of Steeltex. This results in easier troweling and less waste of plaster.
- 4** "Floating-Well" Action. Minimizes contact of wet plaster with dry lumber. Helps prevent frame distortion from damaging plaster, eliminates joist and stud marks.
- 5** Adaptability. Steeltex is widely used in all types of construction—nail-on and suspended ceilings, furred walls, hollow partitions, etc.

YOUR clients benefit because Steeltex gives them a better job—one that retains its attractive appearance with little, if any, maintenance expense. And you benefit through savings in time and plastering material which mean a greater profit.

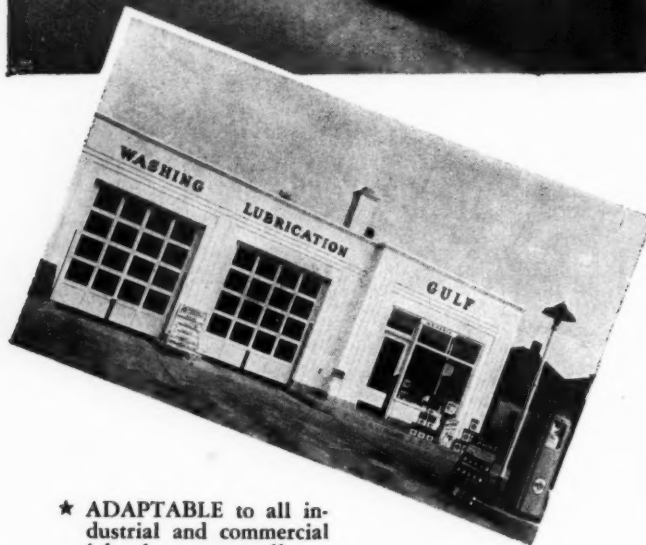
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JOHNS-MANVILLE

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The **"OVERHEAD DOOR"**
TRADE MARK
WITH THE
MIRACLE WEDGE



- ★ **ADAPTABLE** to all industrial and commercial jobs, large or small.
- ★ **RELIABLE**—works in any kind of weather. More than a million users.
- ★ **WEATHERTIGHT**—wedges *tightly* **YET** opens easily.
- ★ **PRICED** as low as a good door can be made.
- ★ **SOLD INSTALLED**—backed by a nation-wide sales-installation service.
- ★ **UNIQUE**—the door with the *Miracle Wedge* feature.

Built by
OVERHEAD DOOR CORPORATION
Hartford City, Indiana—U.S.A.

MAIL COUPON TODAY!

Please send full information and free literature on doors for the purpose checked:

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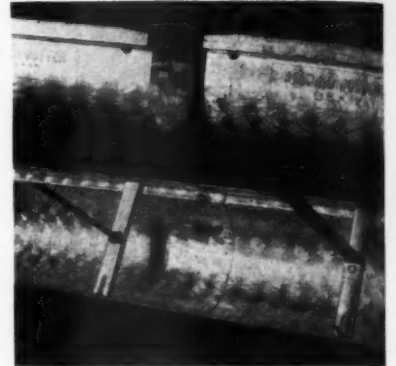
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AB-240

Solderless Joint Eaves Trough

AN outstanding development in eaves trough and gutter design to give substantial savings on installation costs has been made by the Wheeling Metal & Manufacturing Co., Wheeling, W. Va. The new Belding solderless joint eaves trough requires no solder or special tools to erect. To make a water-tight joint, the ends are fitted together and locked into place with one bolt and nut. Corner sections are mitered ready for installation, being joined like the straight section. Corner and end sections are provided with downspout tubes. Four, five and six-inch sizes are available in standard 10-foot lengths packed complete with bolts, nuts and washers. The trough is furnished in 24, 26 and 28 gauge USS Checkerboard galvanized steel, galvanized Armco iron, 40# coated terne plate and 16 ounce copper.

NEW eaves trough with solderless joint speeds erection; standard malleable circles or specially designed hangers which snap in place are available.



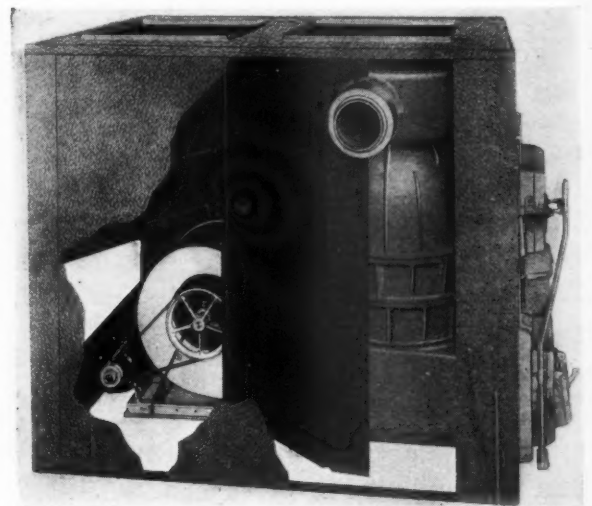
New Fade-Proof Nu-Wood for Interiors

THE Wood Conversion Co., St. Paul, Minn., has announced Kolor-Fast Nu-Wood, a new fade-proof interior finish. Nu-Wood Kolor-Fast is available in tile and plank in variegated and tan colors; Nu-Wood Kolor-Fast Board is available in tan. The overall colors are slightly lighter, giving the material a higher light reflection value in keeping with the modern tendency in interior finish.

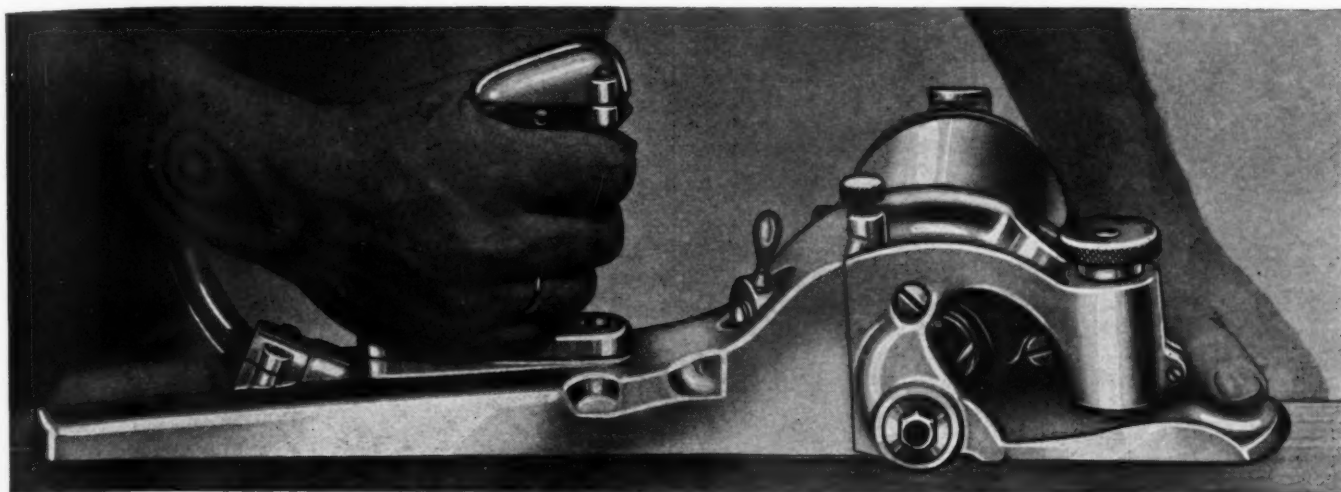
A new tongue and joint treatment has been used on the Plank and Tile, making the bevel at the joint less obtrusive and more refined. A new clip system for blind nailing with the tongue and groove joint is now available. The clip is so designed that it can be used in either the tongue or the groove.

Coal-Fired Winter Conditioner

THE new LX model coal-fired air conditioning furnace offered by Round Oak Co., Dowagiac, Mich., provides efficient heating for modern homes. Construction is of heat resistant cast iron of a type assuring long life. The attractive casing finished in Hammerloid blue contains the fan and blower assembly and air filter racks as well as the furnace and heat exchanger. The unit provides automatic air circulation with the added features of filtering and humidification economically fired for low cost.



CUTAWAY view of new hand-fired winter air conditioning unit.



SAVE TIME..MAKE MONEY

**Fitting, Beveling Doors, Sash,
Storm Windows, Screens, Transoms!**

The biggest capacity Portable Electric Plane on the market, the Carter J5 will plane surfaces up to 2½" wide—in a fraction of the time required for hand planing! Spiral cutter turns 18,000 r.p.m., leaves smooth, true surface. Makes straight or bevel cuts to 45°. Quickly set for any depth cut to ⅜". The J5 will pay for itself on one big job! Write for literature and demonstration. **R. L. Carter Division, The Stanley Works, 133 Elm St., New Britain, Connecticut.**



COMPLETE WITH BENCH BRACKET

The J5 can be rapidly set up in this Bench Bracket and used as a high speed jointer, for inside trim and other planing jobs.

CARTER MONEY MAKING TOOLS



"At last! I've Found the Best WEATHERPROOFED WINDOW UNIT FOR LOW-COST HOMES"

Stock Frames, plus Stock Sash, plus any Choice of Balances, plus our New L.C.H. Metal, with a minimum labor cost, produces the L.C.H. Window Unit.

Distribution of L.C.H. Metal is through recognized Jobber-Dealer channels.

N. S. W. Co., 2137 Gratiot, Detroit, Mich.



**Ask Your Dealer
or Rush Coupon**

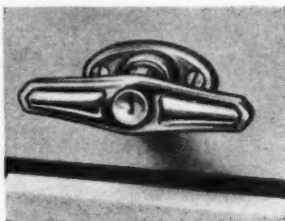
That, Mr. Dealer or Contractor is what you will say when you see this great new contribution to the low-cost housing field.

☐ N.S.W. Co., 2137 Gratiot, Detroit, Michigan. AB-240
☐ Enclosed is a dollar bill or check for a sample set of metal for 24" x 24" Window, prepaid.
☐ Send free folder and complete information.
 MY DEALER'S NAME IS.....
 NAME.....
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 Check Here ☐ Contractor ☐ Dealer.

ANOTHER Selling Feature ADDED

CHROME PLATED HANDLE-LOCK NOW REGULAR EQUIPMENT

Convenient! Provides protection against forced entrance (has catches on both side jambs, inside). Smart, modern design.

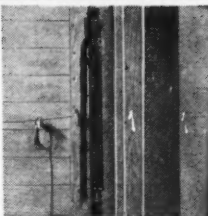


*Sweeps Away
Sales
Resistance*



JUNIOR "Over-the-Top" Light Door Equipment made an instant hit with dealers, because it brought many of the distinctive selling features of the original "Over-the-Top" Door Equipment, at popular prices. Now equipped with the new automobile-type handle-lock, it should be easier than ever to sell. Though "Junior" is lighter, it is nonetheless efficient . . . it's especially designed for the new, modern light doors of 150 lbs. or less, within the limits of 6'6" to 7' high and up to 8' wide (which now can be obtained from your sash and door jobber) . . . and it's priced for quick sales. Write today for information and prices.

FRANTZ MANUFACTURING COMPANY
Sterling, Illinois



Simple, compact. Remarkably easy to install.

Operates with same smoothness of high-priced models.

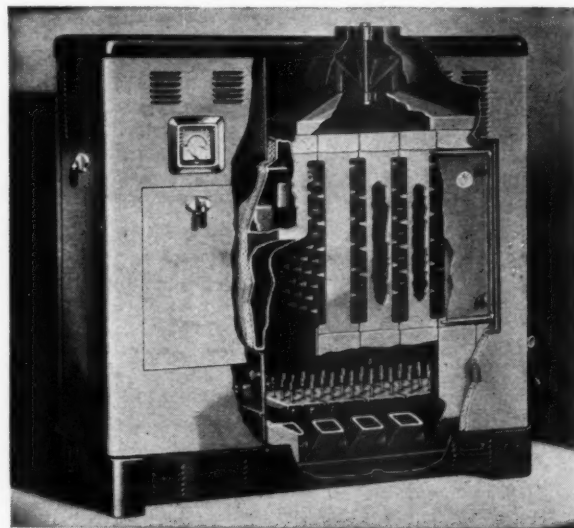
Junior

"OVER-THE-TOP"

LIGHT DOOR EQUIPMENT

Balanced-Sustained Heating System

THE Bastian-Morley Co., Inc., LaPorte, Ind., is offering a complete de luxe home heating system which provides automatic, dependable comfort. It combines the advantages of infra-red radiator heat with special air conditioning units for those rooms which need them. The heart of this new installation is an automatic gas-fired boiler of high efficiency thoroughly controlled to eliminate unevenness of temperature and distribution. A circulator pump, thermostat, fittings, radiators and convectors are other parts which complete the system.



GAS-FIRED boiler of new design is heart of Bastian System.

Offers L.C.H. (Low Cost Housing) Metal Jambs

THE N.S.W. Company, 2137 Gratiot Ave., Detroit, Mich., has perfected a new window side member known as L.C.H. metal, which serves both as side jamb and as weatherproofing. Complete window units with this feature can be furnished by the jobber to the dealer, or the dealer can buy only the metal from the jobber to use in making up this type window from his own stock sash and frames. A choice of any balances can be used, either spring balances, or pulley weight-and-cord.

The use of L.C.H. metal in connection with wood sash means a smoothly operating window, with paint stick eliminated through its wood-to-metal contact.

New Horizontal Sliding Window

ANSWERING the modern demand for bigger window openings, the Andersen Corporation, Bayport, Minn., has developed an innovation in windows that bids fair to make a big place for itself in the building field—a horizontal sliding window which, when closed, has both sash in the same plane and looks much like a casement. When opened the right hand sash slides past the left hand sash by entering another plane.

No longer are stock sizes confined to sash that must be counter-balanced or swung on hinges. Now, in homes of modern architecture, in solariums, in picture windows or wherever multiple units or large glass areas are needed, window openings up to 5 feet 8 inches wide and 5 feet 6 inches high can be obtained with the use of a single pair of sash in the new Andersen horizontal sliding window.

In operating the window, the sash simply glide on polished steel guides guided by a head and sill track. Ventilation is the same as in a casement and in the same volume as a double hung.

Double glazing (optional) which is applied to the outside moves with the sash. Condensation tests made in still air with temperature of 20 degrees below zero on the outside and 70 degrees above on the inside, in 30 per cent humidity, showed positively no condensation between the panes of glass.

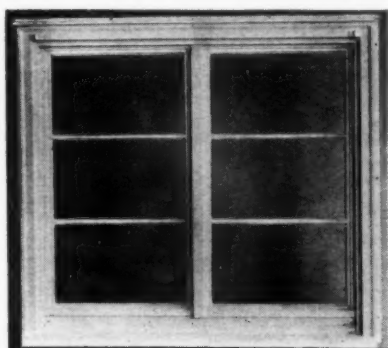
To install, the frame is simply nailed through the wide blind stop to the studding and plates; head and sill track are installed; the sash are set in place without so much as the aid of a screw driver. Time for this whole operation is about six minutes by the

clock. All hardware is applied at the factory, thus saving additional installation time.

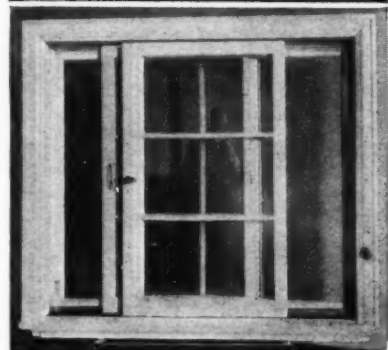
A new feature is that these sash can be removed in a jiffy, double glazing and all. Thus when cleaning time comes around, all of the washing of glass is done from within the room simply by taking out the sash. Hanging out second story windows or precarious perching on ladders is a thing of the past with the Andersen horizontal sliding window. Further, when warm weather comes around, porches glazed with this window can actually become screen porches simply by removing the sash completely and storing them until wanted again.

This new type of window, with just one standard design of frame, can be used in almost any wall construction. A three-quarter inch inside liner can be removed when the unit is used in thin walls. If necessary, in a thin wall, the tracks controlling the movement of the sash, which is inside when open, can be carried by the trim members. The frame has no pocket space for weights or other counterbalancing equipment.

Appearance is of the conventional type of casement window when the sash are in the closed position; because no counterbalancing is required, the mullion posts or divisions between sash openings are very narrow, giving the maximum amount of glass area for any opening which is so necessary in modern architecture.



RIGHT: Outside view of new horizontal sliding casement closed and view of inside with sash opened.



BELOW: Effect of 3 casements as grouped for modern corner window and as used in traditional Cape Cod design.



ALTERNATE BOARDS of Temlok De Luxe in green and white created this interesting ceiling for the Minneapolis Moline Tractor Company's showroom, in Kansas City.



THIS CEILING JOB WAS WON WITH THE MATERIAL WHICH OFFERS INSULATION, COLOR, AND QUIET

Temlok DeLuxe

PROFITABLE new business comes your way when you sell Armstrong's Temlok De Luxe, the modern insulating interior finish. This smooth-surfaced board combines efficient insulation, attractive decoration, and effective noise-quieting. That combination can mean extra profits for you!

Temlok De Luxe can be used effectively in practically any interior. There's a wide market for the three-fold service it has to offer, and it's easy to sell, too. Prospects know and have confidence in the name "Armstrong." And they like Temlok's six pleasing colors—ash, coral, cream, green, walnut, and white.

You're assured of prompt delivery when you handle Temlok De Luxe. Conveniently located wholesalers throughout the country are equipped to give quick service.

Ask for samples and complete information today. Write to Armstrong Cork Company, Building Materials Division, 979 Concord Street, Lancaster, Pa.



Armstrong's
TEMLOK INSULATION
De Luxe Interior Finishes

TEMSEAL SHEATHING • LATH • MONOWALL

WEISWAY CABINET SHOWERS

*For Added Baths in Every
Class of Construction*

Builders! You can add sales appeal to homes from low-cost to most luxurious, with extra baths made possible by these complete, self-contained cabinet showers.

- **Guaranteed leak-proof.**
- **Non-Slip floor of vitreous porcelain, patented.**
- **Walls of vitreous porcelain or baked synthetic enamel.**
- **Adapted for new buildings or remodeling.**



- **Easily, quickly installed.**
- **No special treatment of building walls or floor required.**
- **Complete with showerhead, valves, drain.**
- **Models for homes from low-cost to luxurious.**

Many builders have proven by profitable experience that extra baths, made possible by Weisways, add salability and value far beyond their small cost. Let us give you the facts about Weisway profit possibilities and details of the Weisway line, without obligation.

Mail this coupon for detailed information and specifications on Weisways for all kinds of installations.

WEISWAY
Cabinet Showers

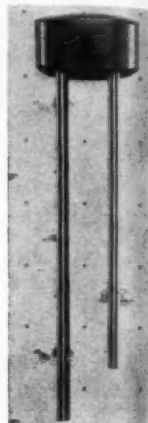
HENRY WEIS MFG. CO. (Est. 1876)
201 Oak Street, Elkhart, Indiana

Without obligation please send specifications on Weisways for [] homes
[] commercial and industrial buildings [] schools, institutions.

Name _____
Street _____
City _____ State _____

Decorative Door Chimes

A RANGE of door chimes for all residential purposes is being offered by Edwards and Company, Inc., Norwalk, Conn. These chimes operated by buttons at front or rear, or both, doors are becoming increasingly popular as signals because of their musical richness of tone. Models range from the large four-tube providing three entirely different signals, to the small Junior bar chimes. A utility chime with a single note for small rooms or offices is also available. Finishes and styling harmonize with interiors; the chimes are operated from a bell transformer.



THE Town Cried model door chime has two polished brass tubes with wood finish cover to fit into an Early American scheme of decoration.

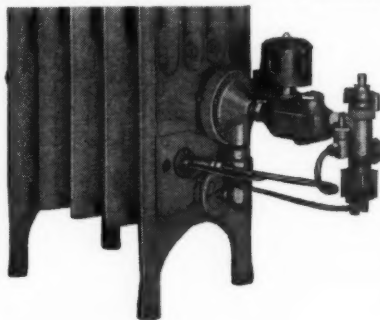
Synthetic Resin Sealer and Primer

A PIGMENTED synthetic resin sealer and primer, known as White Rez, has recently been introduced by I. F. Laucks, Inc., Seattle, Wash. This product, which gives a permanent "beached" effect to wood when used under stain for interior trim, sash, doors, built-ins, wall paneling, furniture and fixtures, eliminates the use of acids and alkaline neutralizers.

White Rez also seals, primes and stops grain raise; when used under enamel or other paints, it eliminates one undercoat, taking the place of one coat of flat paint.

Automatic Gas-Steam Radiator

FOR small shops, stores, and for certain rooms in a house, such as quarters over a garage, remote wing, etc., a gas-steam radiator is manufactured by the Automatic Gas Steam Radiator Co., 496 Brushton Ave., Pittsburgh, Pa. New automatic control and safety pilot are available on this line of radiators. It is necessary only to



run a gas line to the location where they are to be used, and either natural or artificial gas may be used as fuel; available in both vented and unvented types.

GAS-steam radiator operates automatically without boiler, water pipes, coal, or janitor service.

Lighted House Number and Push Button

THE Mello-Chime & Signal Co., Inc., 220 W. 42nd St., New York, is offering a combination "Numberlite" and push button. This appreciated accessory replaces the ordinary push button with an illuminated house number which can be seen from the street, and bell button. It is equipped with a 10,000 hour bulb costing only about 3 cents a month for current. It comes packed in a carton with numerals from 0 to 9,999 and screws for attaching; a de luxe model in hammered cast bronze, brass or Swedish finish is also available.



COMBINATION bell button and lighted house number.

MIAMI BATHROOM CABINETS, MIRRORS, ACCESSORIES

FOR MORE ATTRACTIVE BATHROOMS ASK YOUR DEALER FOR THIS MIAMI CATALOG!

The most complete presentation of bathroom cabinets—over 140 models available. Every contractor and builder should have this book. If your dealer can't supply it, write Dept. AB for a copy.

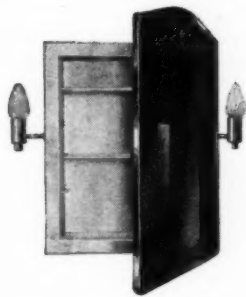
MIAMI CABINET DIVISION

The Philip Carey Company

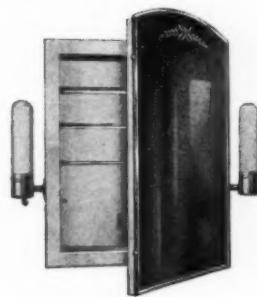
MIDDLETOWN, OHIO



No. 660 A Venetian type all-mirror front cabinet for the home where price must be considered. Recommended for installation in downstairs lavatories.



No. 403 Stainless steel frame around the mirror. Cabinet is equipped with Colonial style electric lights; light switch and convenience plug. Completely wired at factory.



No. 406 An all-mirror front model equipped with demitubular light brackets, light switch and electric convenience plug. Completely wired at factory.



No. 610 Gothic top Cabinet with Full-Mirror Door. Selected No. 1 plate glass mirror guaranteed for five years against silver spoilage.



TO CAPITALIZE on the Keen Interest in BETTER BASEMENTS—

Use either of these obviously Superior Windows

Your prospects will spark immediately to the better, cleaner ventilation they provide, the convenience of operation, and the weather-tight, substantial construction—Let these factors which lend a "quality character" go to work for you. They're valuable selling helps that cost you nothing extra.

BOTH PROVIDE INDIRECT VENTILATION WITH WEATHER PROTECTION

Generous top opening, permitting an abundance of indirect ventilation free from drafts (particularly desirable in laundry and recreation rooms). Prevents dirt, leaves, rain and snow from blowing in.

PLUS CENTER AND FULL OPENING—QUICKLY—CONVENIENTLY

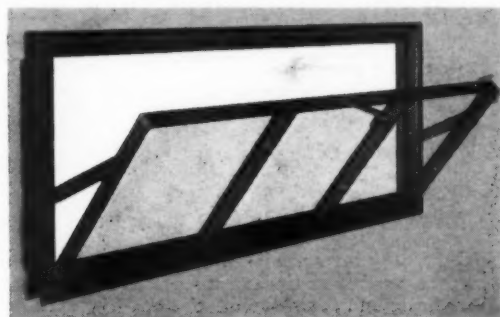
The "Champion" has a practical, easy-operating cam lock with inbuilt ring—The "Premier" a "Versilator" locking bar which operates from the sill level.

PLUS MANY STRUCTURAL SUPERIORITIES SUCH AS THESE:



VENTO "PREMIER"

1. Heavy double channel, pressed steel frame.
2. All-welded construction.
3. Unequaled ease for detaching ventilator from frame.
4. The most practical method for puttyless glazing.
5. Top of frame is easily secured to lintel.
6. Design of frame provides the easiest means of securing weather-tight installations.



VENTO "CHAMPION"

7. Carefully prepared for quick and easy attachment of screens and storm sash.

... And they cost no more than ordinary sash

In fact, the "Champion" is definitely priced below many other first line basement sash—the "Premier" costs no more than other first line windows.

Get the Complete Facts:

Ask your dealer about these better basement windows, or write for complete facts. Take the first step NOW toward capitalizing on the keen interest in better basements.

VENTO MAKES A COMPLETE LINE OF STEEL SASH FOR EVERY TYPE OF BUILDING AND IS VERY FAVORABLY KNOWN FOR ITS DEALER COOPERATION

VENTO STEEL PRODUCTS COMPANY, MUSKEGON, MICHIGAN

BRUCE ***STREAMLINE*** **FLOOR**
(FACTORY-FINISHED)

YES, THANKS TO THESE FACTORY-FINISHED BRUCE FLOORS

JUST THINK WE MOVED INTO OUR NEW HOME A WEEK SOONER THAN WE EXPECTED

New...

A LOW-COST FLOOR THAT'S READY FOR USE The Instant It's Laid!

YOU know how anxious an owner is to move into his new home a week earlier. Bruce **STREAMLINE** Flooring comes factory finished . . . saves time of sanding, finishing, waxing and polishing. You save money, too, for this 25/32" x 3 1/4" flooring usually costs less than the ordinary 2 1/4" strip flooring finished on the job.

Bruce **STREAMLINE** Flooring has beveled ends and edges. Available in oak, beech, or maple. Gives a distinctive "patterned" effect that's bound to please the owner. And the factory-applied finish penetrates the wood. Provides a tough, lustrous finish that resists scratching . . . won't chip or peel.

Use Bruce **STREAMLINE** Flooring on your next job. Send coupon for details and scratch test panel.



E. L. BRUCE CO.

1532 Thomas Street
Memphis, Tenn.

E. L. BRUCE CO., 1532 Thomas Street, Memphis, Tenn.

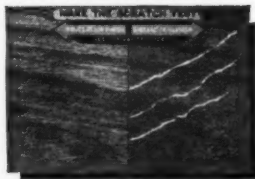
Gentlemen: Please send fully illustrated literature all about the new Bruce factory-finished **STREAMLINE** Flooring. Also a Scratch Test Panel.

Name

Street

City

MAKE THIS SCRATCH TEST



"Bruce-Way" | Surface Finish

Send for this scratch test panel. Half is finished the new "Bruce-Way" used on **STREAMLINE** Flooring—other half finished the ordinary surface way. Scrape a coin across both finishes. See how the ordinary surface finish scratches and chips away, while the "Bruce-Way" finish is unharmed.

Little Giant 4" Belt Sander

THE Clarke Sanding Machine Co., Muskegon, Mich., has recently introduced its Dreadnaught Little Giant 4" endless belt sander, a machine especially suitable for reduced maintenance of operating costs where flat sanding operations demand speed and fine work.

Features include a special horsepower, heavy duty motor, and a 4-inch endless sanding belt operating on two rubber-covered pulleys. As a result of an ingenious arrangement, the belt must run true at all times. The machine may be had with or without vacuum system at slight cost differentials.

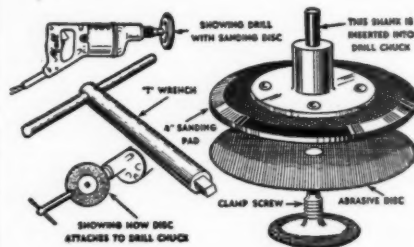


ENDLESS belt sander.

Electric Drill Sanding Pads

THE Mall Tool Co., Chicago, has introduced an approved sanding pad for use on any make, model or size of portable electric drill. This sanding pad is useful for doing occasional jobs where the amount of work does not warrant a standard sanding machine.

This equipment consists of a 4-inch sanding pad, one abrasive, a clamp screw to hold the abrasive and pad in place, and a wrench for fastening. The shank is inserted into the drill chuck in the same manner as a bit.

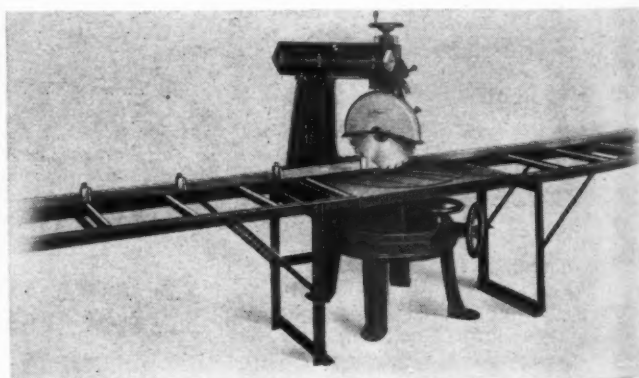


ABRASIVE disc is attached to sanding pad with clamp screw and shank fitted into drill chuck.

New Uni-Point Radial Saw Has Wide Range of Uses

THE uni-point principle embodied in a new radial saw and woodworking machine introduced by the American Saw Mill Machinery Company of Hackettstown, N.J., makes for faster, more accurate cutting. Through use of a counter-balanced tilting column, the saw is pivoted both horizontally and vertically about one point in the center of the table. Thus the saw always enters the cut at the same position in the table, so that an accurate fixed gauge and cut-off stops may be used regardless of the angle of the cut.

This new machine, introduced by one of the oldest manufactur-



SAW always enters work at same point, insuring accurate use of gauge and stops on ball bearing table shown above.

ers of sawing equipment, is a versatile, all-purpose machine, which builders can use either in the workshop or on the job, with economy. It will perform any conceivable kind of sawing job, and in addition will perform such other operations as dadoing, rabbetting, routing, tenoning and shaping.

Due to the uni-point principle with the saw and motor attached to a tilting column, cross cutting at any plain or compound angle can be performed without raising or lowering the saw. Rapid adjustments for any angle are possible, which constitutes an important time-saving feature.

The telescoping over-arm brings the saw out in the clear with no projecting parts to strike operator's head or shoulder. The entire work table is free and clear of obstructions when saw is pushed back.

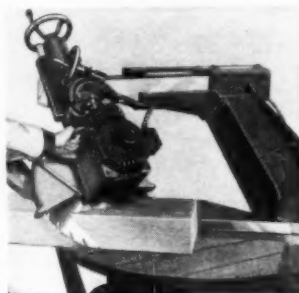
Hand measuring is eliminated by the use of accurate fixed scale and stops, since the saw always enters the cut at the same position regardless of angle. All adjustments are made from the front of the machine quickly and easily. The new uni-point saw has a wide range of uses for builders and comes in a portable "Junior" model as well as a larger and heavier "Senior" model. The Senior model has a cut-off capacity of 5" by 20", and the Junior model has a 3" by 15" capacity. The weight of the Senior model is 1,200 lbs. and the Junior model 435 lbs.



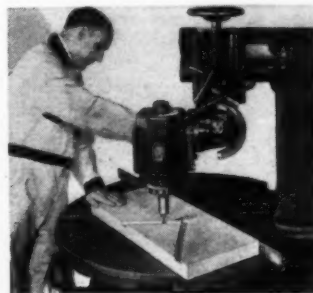
JUNIOR model is easily portable.



BEVEL RIPPING done easily.



BEVEL cross cutting with speed.



ROUTING, dadoing and shaping.

Device for Detecting Wall Moisture

THE Colloid Equipment Co., Inc., 50 Church St., New York City, has placed on the market the Delmhorst moisture detector which tests wood, plaster and other materials for surface and sub-surface moisture percentages. By pressing the needle electrode into the material, and turning the knob dial until indicator lamp lights, the moisture content is instantly and accurately read directly from the dial. The instrument is self-contained and built for long service. Range for wood: 12 to 24 per cent moisture content.



SIMPLE method of testing a plaster wall for moisture content with new detector to determine condition for decorating, finishing, etc.

▼ ADDED ▼ ATTRACTION



This Welsh Dresser is a built-in, sales-building detail specially designed to appeal to women. Made of knotty pine, with white-limey finish, the dresser is both attractive and practical.

FREE DETAIL SHEET: For complete information about construction of this Welsh Dresser, write to the Western Pine Association, Dept. B-134, Yeon Bldg., Portland, Ore.

**THE WESTERN PINES WILL DO YOUR
NEXT JOB BETTER—TRY THEM**

Western Pine Association, Yeon Building, Portland, Oregon

*Idaho White Pine

*Ponderosa Pine

*Sugar Pine

—*THESE ARE THE WESTERN PINES—

This BOOK



...and this METHOD mean ASSURED PROFITS

You can only be sure of *full profits* — when your building methods are fully controlled — and your costs are fully controlled. And that's just what the Precision-Built method of construction offers the contractor. The method is thoroughly proved. Within the past 3 years, \$3,000,000 of Precision-Built Homes have been erected!

The results of this wide experience are available to you in a book just published. *TOMORROW'S HOMES* tells the full story of the Precision-Built method, shows you how to control building, control costs, use local labor and local materials, and be sure of your profits, in advance!

This book, written after 15 years of research, tells exactly how to sell, fabricate and erect houses — *in 17 to 30 days*. It shows you how to cut costs. *TOMORROW'S HOMES* contains more than 300 pages and is profusely illustrated with photographs and full construction details. It provides a complete, accurate and rapid estimating system — with area, lineal foot and cubic yard tables from 1' 0" x 1' 0" to 50' x 50'.

This valuable new book — normally priced at \$10.00 per copy — is *privileged* to established builders at \$5.00 per copy. Use the coupon below — mail it in today — to make certain of getting your copy.

Weatherproof HOMASOTE Insulating and Building Board

HOMASOTE COMPANY, TRENTON, NEW JERSEY

I enclose check () money order () to secure _____ copies of *TOMORROW'S HOMES* at \$5.00 per copy.
() I would like further details about *TOMORROW'S HOMES*.

Name.....
Address.....
City.....State.....

News of the Month

Building Activities and Meetings

January Residential Building Volume Indicated as 20 Per Cent Above 1939

RESIDENTIAL building figures for the first 22 days of January amounting to \$61,027,000, according to F. W. Dodge reports in 37 eastern states, indicate a January volume more than 20 per cent ahead of the same period last year; this is in line with *American Builder* forecast for 1940, as contained in the issue of last month.

Statistics for the four classes of construction, as recorded from January 1-22, are as follows:

37 Eastern States	Jan. 1-22, '40	Jan. 1-22, '39	Dec. 1939
Residential	\$ 61,027,000	\$ 50,095,000	\$ 88,681,000
Non-Residential	39,056,000	51,733,000	57,757,000
Public Works.....	33,405,000	41,621,000	180,683,000
Utilities	14,931,000	22,539,000	26,977,000
Total	\$148,419,000	\$165,988,000	\$354,098,000

Southern Pine Silver Anniversary Meeting

THE 25th annual meeting of subscribers to the Southern Pine Association, composed of lumber manufacturers in all southern states, will be held in New Orleans March 27, 28 and 29; also to be included are sessions of the Southern Pine Industry Committee. Questions of important concern to the entire lumber industry of the South will be considered at this meeting. Appropriate ceremonies are planned to commemorate the "Silver" anniversary of the organization.

New Hard Wood Fibre Material

THE Masonite Corporation, Chicago, Ill., has developed an all-wood substance, strong enough to serve as dies in the stamping of metal parts under 1,500 tons pressure, especially to meet the needs of the airplane industry. Use of this wood fibre material is still limited to stamping airplane parts from aluminum and alloys. This fibre board is manufactured by essentially the same process as other Masonite products, and most closely resembles Tempered Presdwood.

Death of Francis J. Plym

FRANCIS J. PLYM, founder and head of the Kawneer Company, Niles, Michigan, died on January 12 at the age of 70. His son, Lawrence Plym, succeeds him as president of the company.

Mr. Plym was the pioneer in modern store front construction, the first patents in this field having been granted him in 1906. More than 125 patents having to do with improved glass setting, windows, doors, and other building features have since been granted him. Born in Sweden in 1869 and coming to America while still an infant, Mr. Plym grew up in western Illinois working with his father, a cabinet maker and carpenter. He studied architecture and was graduated from the University of Illinois, College of Architecture, in 1897. The Kawneer Company, organized in Kansas City in 1906 and later moved to Niles, Michigan, has been built to large size and importance, manufacturing the architectural improvements devised by Mr. Plym.

To encourage youth in the architectural field, Mr. Plym had for years given two scholarships annually to students in the University of Illinois, each providing a year of study in research abroad. In 1938 the Illinois Society of Architects made him an honorary member of that body.

FRANCIS J. PLYM



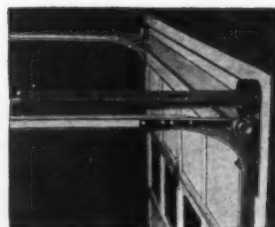
Look to Rō-WAY for the LATEST in OVERHEAD Type DOOR IMPROVEMENTS!



Popular single door for Residence Garage.



Ro-Way Commercial Garage Doors are widely used.



Ro-Way, by means of the Ro-To Live Spring, for Residential Garage Doors, ends side-drift and binding.

Ro-Way, by Parkerizing and Painting, gives Door Hardware and Tracking superior protection against rust and corrosion.



Ro-Way, by perfecting the "Crow's Foot" Outer Bearing Support, insures permanent, sheave wheel shaft alignment.



**WITHOUT
EXTRA COST
YOU GET . . .**

Ro-To Live Spring, which eliminates all side-drift and binding.

"Crow's Foot" Outer Bearing Support keeps the load sheave wheel shaft in perfect alignment . . . gives smoother operation . . . runs more quietly.

Parkerized and Painted Hardware, giving Garage Door Hardware and Tracking the same protection provided in fine motor cars, refrigerator cabinets, etc.

Judge the Future by the Past!

Go back over the years, since Ro-Way Overhead Type Garage Doors were introduced. Think of the many improvements Ro-Way engineers have contributed. Note the patented Ro-Way features designed to make Overhead Type Doors more dependable, more smooth and quiet-running, easier to operate, and especially to add years to their service and lasting good looks. You'll agree that Ro-Way truly "sets the pace." And Ro-Way will continue to do so.

Get the extra values Ro-Way offers today, without extra cost. Write for literature and complete information. Address . . .

ROWE MFG. CO. 792 Holton St., Galesburg, Ill., U.S.A.

[Ro-Way Overhead Type Doors are available for all Residential, industrial and Commercial needs.]




From this clean, smokeless, cinderless quarry comes the 99 1-2% pure dolomite from which the original Ohio White Lime Finish is made. For better plaster always order

the Lime that's packed in Zig Zag Bags



**The Ohio Hydrate and Supply Co.,
Woodville, Ohio**

Ohio White Finish — Hawk Spread White Finish — Ohio
Ritewall Plaster — Ohio Sanline Finish — Ohio
Mason's Lime — Mason's Mortar
Ohio Ground Burned Lime.



Jack knows that home seekers
Will never buy "leakers"
So he uses shingles from
Robert McNair.
He knows very well
A tight roof will sell
And never give trouble
or care.

ROBERT McNAIR SHINGLE CO.
VANCOUVER, BRITISH COLUMBIA
"OVER 400 DEALERS TO SERVE YOU"

SCAFFOLD WITH TROUBLE SAVERS

Save Time! Save Labor! Save Money!



ROOFING BRACKETS
Sliding tongue extends to 13" capacity. Takes a 10" plank. Adjustable to any pitch. Strong . . . safe and efficient!



SCAFFOLD BRACKETS
Drive four nails . . . hang. When finished, unhook and drive nails home. Will support a ton. Strong and compact!



ADJUSTABLE TRESTLES

The famous "Trouble Saver" Adjustable Steel Trestles. Made of rail steel for lasting strength. Easily adjustable to any height. Fold compactly for cartage. Best trestles for all building work you can buy!

These are just three of the complete line of money-saving "Trouble-Savers"! Write today for descriptive literature and prices. Find out NOW why Trouble-Savers will give you more service . . . save you more money!

THE STEEL SCAFFOLDING CO., INC.
Corner Governor & Missouri Sts. Evansville, Indiana

Market Activity Has Advanced with Retail Prices Somewhat Higher; Undersupply of Homes Increasing

A DECIDEDLY optimistic note features the 34th semi-annual survey of the National Association of Real Estate Boards covering reports from 261 cities. This summary shows that real estate prices have risen as against a year ago in 23 per cent of the cities of the United States, that is to say in almost one city out of every four, the rise amounting to 10 per cent as a median. Market activity is greater than was the case a year ago at this time in a majority of the cities (57% of them), and changes slow in degree but striking in their combined significance are measurably in the demand-supply situation, financing situation, and earning power of real estate.

Some elements which taken together indicate a healthy base for real estate commitments are as follows:

Prices are at least on the level of a year ago in 87 per cent of the cities; they have fallen in only 13 per cent of the cities (although it should be noted that the drop, where it occurred, like the price rises where they occurred, had a median of 10 per cent). Market activity is at least as high as last year in 92 per cent of the reporting cities.

Shortage of single-family dwellings is more prevalent than at any time since new home building got into stride. It is reported in 45 per cent of the cities, as against 34 per cent a year ago, and only 3 per cent now show oversupply. In 52 per cent there is a normal supply.

Rents of all kinds show a high degree of stability. What movement there has been in the past twelve months is predominantly upward, and the outlook is for this situation to continue.

Interest rates, for the first time in real estate history in this country, have smashed below the old 6 per cent rate as the commonest rate for first mortgages on new moderately priced homes. They are at the lowest level and are the most nearly uniform, geographically, that the country has ever known. And they are still falling in 41 per cent of the reporting cities, are rising in only 3 per cent of the cities, while money supply for real estate financing remains adequate or in excess of available loans in 92 per cent of the cities.

Better demand has stiffened rents for downtown business space in 23 per cent of the cities, but oversupply in business buildings is still commoner than shortage.

Largest Cities Show Most Advance

The largest cities are the ones most frequently showing higher prices and advance in market volume, with 67 per cent of them on the up side as to sales volume and 33 per cent showing advance in prices, while only 11 per cent show decline in either prices or volume.

Apartment shortage is reported in one city out of every four (25%), while oversupply is shown in only 16 per cent of cities. In other words 59 per cent have a balance between supply and demand.

A sideways movement has been the history for apartment rents in 68 per cent of the cities, but rates are up in 21 per cent of the cities, while they are down in only 11 per cent of the cities.

NEWS BRIEFS—

JOHN H. MALLON has recently been appointed sales manager of the Louisville Cement Co.; he was formerly assistant sales manager and is a recognized authority in his field. . . . STOKER sales in 1939 broke all previous records and exceeded 100,000 units. . . . SQUARE D has purchased the Kolsman Instrument Co. . . . Designed to give a panoramic picture of the local building situation, the CHICAGO BUILDING CONGRESS Banquet-Conference is to be held on Feb. 13. . . . The F. W. Shepler Stove Co. has changed its name to SHEPLER MFG. CO. . . . At their 23rd annual convention, members of the RED CEDAR SHINGLE BUREAU made plans for a new year and new decade of building. . . . Employees of the McKINNEY MFG. CO. recently celebrated the company's 75th anniversary.

JOHN H. MALLON



CLARK
Dept. A
O. K.—
get into
Business
NAME

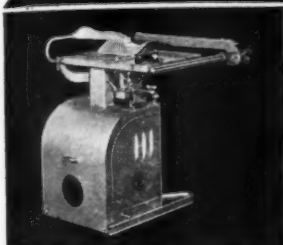
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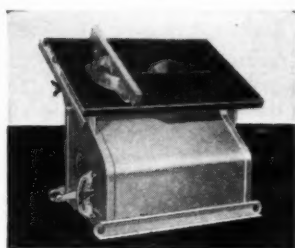
MC FAST

PRECISION SAWING
WITH
KOSTKUTTER SAW RIGS



KOST KUTTER JR.

A keen sawing outfit that gets the work done quicker. Tilting top—10" saws powered with famous 2 H. P. Briggs & Stratton engine. Saw-dust proofed. Easy to transport.



KOST KUTTER SR.

Sensationally new. Completely enclosed and saw-dust proofed mechanism. Tilting top. 14" saws. 6 H.P. Wisconsin engine. Takes up to 4 inch stock. CMC also makes the "Power Sawyer" . . . a big outfit with 16" or 18" blades for 6" stuff.

NEW CATALOG Get this book showing the newest Mixers, Pumps, Hoists, Saw Rigs, Carts, Barrows and other new equipment in this year's wonderful new CMC line.

**CONSTRUCTION MACHINERY COMPANY
WATERLOO, IOWA**

WOULDN'T YOU LIKE A PROFITABLE BUSINESS OF YOUR OWN

?

Of course you would! And it's right within your reach. You're in identically the same position as hundreds of our present, highly satisfied customers once were—wishing—on the outside looking in. Today, these men, as a result of a thoroughly proven plan, are independent—they own highly profitable floor sanding businesses. They're their own bosses and make more money than they ever dreamed of before—\$10, \$20 and even \$30 per day are not unusual occurrences. And get this—the identical opportunity is yours if you will simply act now! Take the first step to INDEPENDENCE by sending for complete details. Mail the coupon TODAY!

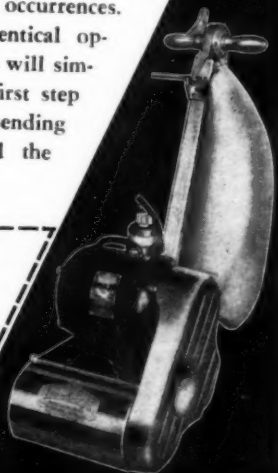
CLARKE SANDING MACHINE COMPANY
Dept. A.B. 240—Muskegon, Michigan
O. K.—Send me the information on how to get into the PROFITABLE Floor Sanding Business.

NAME

ADDRESS

CITY

STATE



DREADNAUGHT WHIZZARD 8

RUUD-MONEL GAS WATER HEATERS

First Choice
of Builders and Owners



*20 Year
Guarantee
Against
Rust*

For 51 years Ruud has devoted itself to one specialized field—the manufacture of quality gas-fired water heaters.

In the Ruud automatic gas water heater with the Monel tank, Ruud offers builders a water heater that assures its owner 24 hour year-in-year-out satisfaction. The rugged Monel tank carries a 20-year guarantee against leaks or failure due to rust or corrosion.

To make home owners select a Ruud this spring, a large schedule of Ruud-Monel advertisements will appear in the Saturday Evening Post, Life, Colliers, Better Homes and Gardens and American Home.

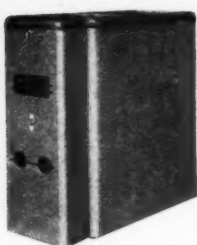
For perfect hot water service that builds good will for you, standardize on Ruud-Monel gas water heaters.

RUUD MANUFACTURING COMPANY

Pittsburgh, Pa.

Toronto, Ontario

PAYNE'S NEW ZONEAIR



Just a year ago this month the New Payne Zoneair was introduced to the gas heating field. Yet in that short time it has won countless friends from coast to coast.

Why such outstanding, immediate popularity? Simply because the New Payne Zoneair offers, in a single, compact unit, all the functions of true winter air conditioning. It heats, circulates, ventilates, filters and humidifies—automatically!

Used individually to heat separate groups of rooms, it provides the added advantage of convenient, economical zoned warmth.

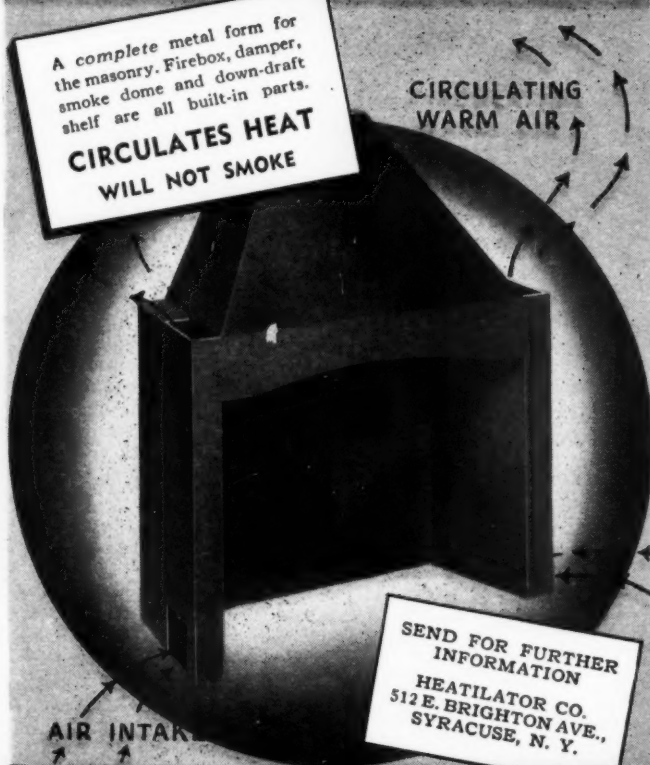
For information about the latest 1940 Model Payne Zoneair, see your local dealer or write the factory.

Payne

**FURNACE AND
SUPPLY CO., INC.**
Beverly Hills, Calif.

EASIER to BUILD

A complete metal form for the masonry. Firebox, damper, smoke dome and down-draft shelf are all built-in parts.
**CIRCULATES HEAT
WILL NOT SMOKE**



AIR INTAKE

SEND FOR FURTHER
INFORMATION
HEATILATOR CO.
512 E. BRIGHTON AVE.,
SYRACUSE, N. Y.

HEATILATOR Fireplace

LETTERS from Readers on All Subjects

Facts, opinions and advice
welcomed here

How to Attach Metal Downspout to Wood Gutter

Fenton, Mich.

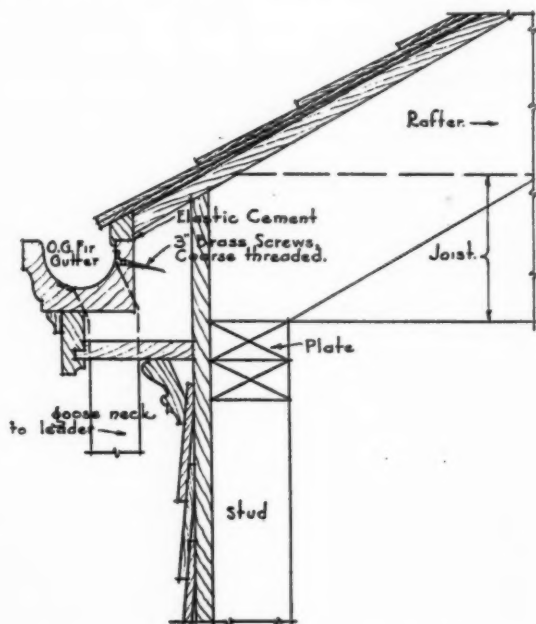
To the Editor:

I am building a house on which the specifications call for wood gutters. I have talked with every tinner in town, but none knows how to attach a metal downspout to the wooden trough. Could you please help me out in this problem?

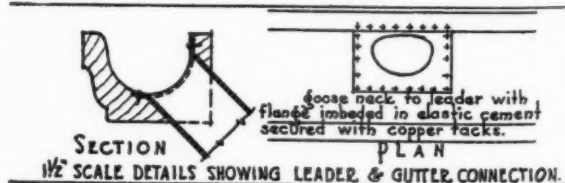
HENRY ALCHIN.

Answer:

According to one of the prominent producers of wood gutters, who was consulted on this query, the accompanying details below show good practice for wood. These outlets are very simple and inexpensive, being a flanged piece of metal (preferably copper) embedded in elastic cement and tacked to either the inside or outside of the outlet opening in the gutter, preferably the inside. The wood gutter manufacturer does not stock these on account of there being so many sizes and shapes of conductors; however, any tinner or sheet metal worker can furnish them along with the downspouts.—EDITOR.



1½" SCALE DETAIL OF O.G. FIR GUTTER WITH BOXED CORNICE.



1½" SCALE DETAILS SHOWING LEADER & GUTTER CONNECTION.

More About "Situation Wanted"

Wellington, Kans.

To the Editor:

I have been a reader of *American Builder* for some time and have found it very interesting and instructive.

I note with much interest the letter of Lawrence Burkhart in regard to a department devoted to the interest of skilled workmen wishing to secure employment or to increase their salary

or broaden their experiences. I believe his idea a very intelligent one and that it would be very helpful.

If you had such a column I would send in an ad, perhaps something like this:

Middle aged man, graduate concrete engineer, experienced in the supervision of construction of small monolithic concrete buildings, as well as the laying of concrete highways and the building of small bridges. Also experienced in cabinet work, house carpentry, and form building. Would like connections with construction company having either frame or concrete construction work.

S. F. DASHER.

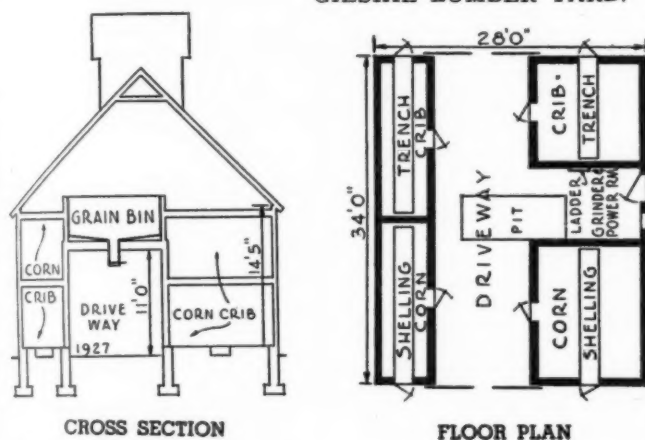
Corn Crib Plan

Washington, Mo.

To the Editor:

We have been looking for a plan of a corn crib with an elevator but have been unable to find one. Mr. C. L. Dann of Wiles-Chipman Lumber Company has seen something of this kind in one of your magazines and suggests you might be able to tell us who makes these plans.

GIESIKE LUMBER YARD.



Answer:

Above is a practical plan and a strong, well designed building suitable for a good sized farm. It is from a design by National Plan Service, Inc., Chicago. Shelling trenches are provided for each crib and space over driveway is used for the storage of small grain. The concrete walls extend 12 inches above grade. Capacity for this size is 4000 bushels of corn and 1000 bushels of grain.—EDITOR.

Accurate Estimating

Seattle, Wash.

To the Editor:

Please advise the cost of your plan book, "Buyer Approved Homes" in quantities of a dozen or a hundred at a time.

It is my purpose to give or sell the book at very small cost to those interested. Your TruCost system of estimating is an important contribution to the profession.

I devised a "square" method in 1934, used it successfully in 1935 while chief architect of the Resettlement Administration in Portland, Ore. I reduced it to three operations: Area at, say, \$1 per square foot, perimeter at, say, \$10 per lineal foot, and surcharge, \$1500, which includes all items not in the structure, the partitions, doors and windows, cornices, etc., being absorbed in the perimeter.

The results were very accurate. In a hundred estimates, several fell within \$2, and most of them within \$10 of a detailed estimate made from quantity surveyors' lists. The similarity between your method and mine attracted me as a subscriber to the *American Builder*.

CYRIL A. COSTELLO, Architect.

From Sweden

Slovesborg, Sweden.

To the Editor:

The *American Builder* is very much enjoyed over here and I wish to thank you for the fine service of prompt mailing each month.

ALBIN PERSON.

Individuality in every
EDWARDS
Chime

WHILE there's individuality in EVERY Edwards Chime (more than forty designs illustrated in the full color catalog), there's a dependability in each and every one of them on which you can rely absolutely.

More than 67 years experience in manufacturing high quality electrical signaling equipment has given the name "EDWARDS", as applying to electrical signaling, the same significance as "Sterling" when coupled with silver.

Write today, to Department M, for a copy of the catalog.

EDWARDS and COMPANY
INCORPORATED
NORWALK, CONNECTICUT

TRAIL-SMITH

7-S or 10-S

Spring-mounted axle — Roller bearing auto type wheels — Oversize low pressure pneumatic tires — Automatic skip vibrator — Enclosed gear reduction — Multiple V-belt drive — Vertical synchronous type tank.

BUILT TO "TAKE IT" — either on the job or traveling between jobs. Compact. Lightweight. Roller bearings throughout. Also 4 wheel end or side discharge models. Other sizes 2½-S to 112-S. Write for literature.

THE T. L. SMITH COMPANY
2849 N. 32nd Street Milwaukee, Wis.

Tows behind car or truck at fast driving speeds!

SMITH

MIXER MANUFACTURERS FOR MORE THAN 40 YEARS

How to Make FIR PLYWOOD "BEHAVE"

ALWAYS a "honey" for economy, Fir Plywood has been a "problem child" for finishing. But when treated with FIRZITE, it "behaves" like a model of beauty and perfection, whether stained, painted or enameled. No "wild" grain! Even hairline checking is largely eliminated!

One Coat of FIRZITE Does the Job!

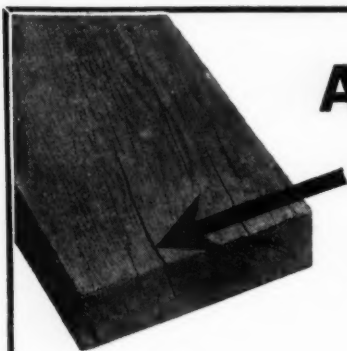
For better Fir Ply "behavior," apply one coat FIRZITE, add enamel undercoat, then eggshell enamel finish. (See illustration.) FIRZITE penetrates spring and summer growths uniformly. Subsequent materials "take" better. Smooth, rich finish makes Fir attractive as more expensive woods! Learn why this better Fir finishing service means greater customer satisfaction and extra profits for you. Send for illustrated folder and FREE "Firzited" panel!

By Quart
or Gallon



Covers 600 to 800
sq. ft. per gallon

PAINT
BREINIG BROTHERS, INC.
HOBOKEN, NEW JERSEY



ARE YOU PAYING for THIS?

You make more on every job where you don't have to send someone out to re-fit a door or window that sticks or rattles, or has warped and twisted, due to moisture absorption. The same applies to siding and other lumber.

Properly preserved millwork and lumber at a few cents extra is actually cheaper to handle than unprotected wood. Insist on WOODLIFE-treated stock and get rid of expensive service complaints. Write for information on how you can make an extra profit by treating in low-cost tanks of your own.

Protection Products Mfg. Co.

Mfrs. of PRESERVATIVE SOLUTIONS for **18** Years

Research Laboratory and Plant KALAMAZOO, MICH.

LETTERS—

(Continued from page 121)

Like Lumber Presentation

Red Bank, N.J.

To the Editor:

Permit me to congratulate you folks on your swell presentation of the cause of lumber in the January issue just at hand. Lumber deserves a break. I shall make it a point of suggesting to dealers at our meeting tomorrow that they preserve this issue in their lumber archives, for use in selling.

E. H. CHRISTY, Secretary
Material Men's Club of Monmouth and Ocean Counties

Little Rock, Ark.

To the Editor:

We wish to compliment you on the very practical manner in which you have presented the use of woods. This is real constructive information and understandable by the average reader of this magazine who influences the home owner in determining the type of lumber to use for the different types of structures.

ARKANSAS MILL AND LUMBER CO.,

By J. W. Trieschmann, Pres.

Urges Use of Good Sash Cord

Louisville, Ky.

To the Editor:

For many years home owners have had the disagreeable annoyance and expense of replacing cheap sash cord within one to two years after installation. Practically all such replacements are caused by breakage or failure of the cord to function properly. When Mr. Homeowner knows he must replace his sash cord, he is naturally disturbed. He hadn't counted on this. As a matter of fact, up to now, he hadn't given a thought to sash cord! So, he investigates. He doesn't want this expense coming up again in one or two more years.

Soon he learns that for a few cents more per window he can buy a good sash cord—which will last as long as the house itself. Now he's more than merely disturbed. He's mad! Mad at the contractor who built his house. On further investigation, Mr. Homeowner discovers that the labor cost of replacing sash cord in one window is about the same as the difference in price between poor and good quality cord for all the windows in his house. By this time he's raving mad!

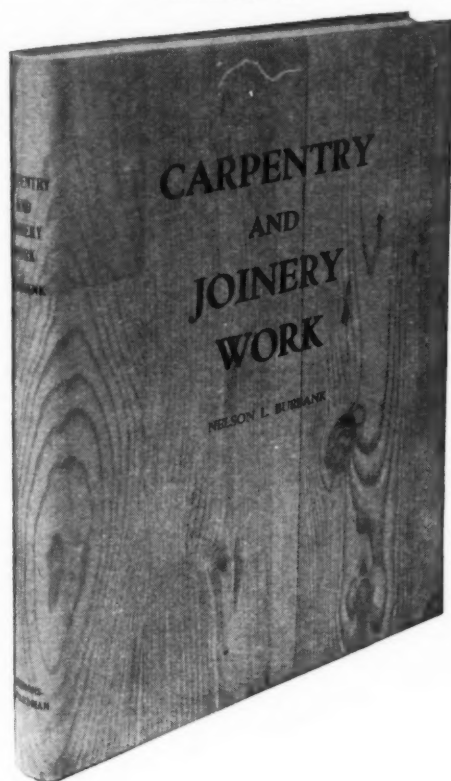
Can you blame him? If you've ever had such an experience, you won't. Is the contractor at fault? I don't think so. The real difficulty lies in the fact that sash cord is such a small item in the entire contractor's estimate—and an item that from experience has changed so little in the past quarter century—that contractors simply take for granted that there is comparatively no difference in the quality of sash cord offered. There is, however, a vast difference in sash cords today. Once that difference is fully understood I am confident that contractors will recognize the wisdom of selling quality sash cord—both from the additional profits they can make and from the permanent satisfaction they can offer their customers.

Many contractors know there is some difference in the quality of sash cords. Few, however, know how much difference there is or how to tell quickly whether a sash cord is good or poor quality. The simplest and surest way to determine the grade of sash cord is to unravel an inch or two of one end of the cord. Then examine the unraveled section carefully. If this examination shows that the cord is all yarn and of solid braided construction, it may be classified as good or fine grade. In this type of cord each yarn is spun from uniform cotton, and twisted into tough strands. These strands are then braided firmly into cord around a center strand of the same quality. A good grade cord is never "loaded" with chemicals to add to its weight, and such a cord will not stretch.

If, on examination, you find irregular quality of the individual strands, and a heavily "loaded" center strand, you can classify the cord as a poor grade. In this type of cord there is an irregular quality of the individual strands which are made of soft, loosely twisted rovings. The center strand is heavily "loaded" to add weight. The loosely twisted cotton cover stretches easily and wears through quickly.

A poor grade of sash cord will last from one to two years—

(Continued on page 124)

New Third Edition**CARPENTRY and JOINERY WORK****By Nelson L. Burbank**Formerly Instructor, Building Vocational High School,
Cincinnati, Ohio

The cardinal principles of present day residential construction are set forth logically in simple language, with the aid of many line drawings and photographs. The new Third Edition contains 80 revised pages, 6 additional index pages, and three full-sized blueprints of a Colonial house. A complete Bill of Material for this house is given in Chapter III.

Designed primarily as a textbook, the program of study presented involves class discussion, practical job work and related studies. These include Architectural Drawing, Plan Reading, Carpentry Mathematics, Business English, Civics and First Aid. Because of its detailed completeness it is an excellent book for home study. The greatly expanded index also makes it useful as an up-to-date reference book for those whose student days are over.

1940. 280 pages, illustrated, 8 1/2 x 11 inches, Cloth, \$3.00

BOOK DEPARTMENT
American Builder and Building Age
 30 Church Street New York, N. Y.

PULLMAN

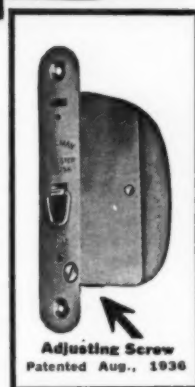
the Sash Balance that IS Adjustable

**NO WEIGHTS
CORDS OR PULLEYS**

The most perfect window for any home is the double-hung window equipped with PULLMAN UNIT SASH BALANCES. Pullman Sash Balances assure perfect window control, easy and quiet operation. They are entirely encased, all pressed steel construction, light in weight and non-breakable. A set can be installed in 10 to 15 minutes. They save you time and money. Guaranteed for the life of the building.

THE ADJUSTABLE FEATURE

Tension of the inside coiled spring in the Adjustable type is quickly changed with an ordinary screw driver, without removing the Balances or the sash.

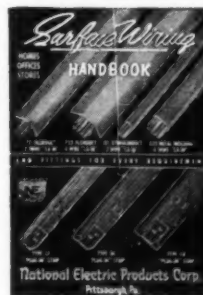
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With hundreds of illustrations showing the most complete and up-to-date methods of Surface Wiring. For New or Old Homes, Offices, Stores or Industrial Buildings. Write for Your Copy Today.

National Electric
 PRODUCTS CORPORATION
 Pittsburgh, Pa.



IS YOUR REPUTATION WORTH 5¢ A WINDOW?

• Eventually (if not originally) most out-swinging casement windows are equipped with Win-Dor Hardware as is proved by the tremendous sales of Win-Dor Operators for replacing unsatisfactory equipment on relatively "new homes."

Nothing makes a new home owner complain more loudly nor starts his wife on a continuous criticism of the contractor than windows which are hard to open and fail to close; which stick and jam. Many a profitable construction job has been lost to the contractor who "saved" his customer a matter of 5c per window per year by substituting "just as good hardware." Such practice makes "knockers" and knockers aren't good in your business.

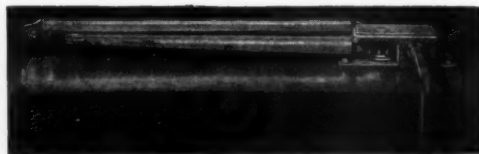
For your own sake as well as your customers' install only Win-Dor Hardware on casement windows.

• Below is illustrated Win-Dor Series 26 Operator a quality product that will never "let you down."



Only
Win-Dor

operators have large $\frac{3}{4}$ " naval bronze worms, machine cut gears and patented sash channel; quality features developed thru 30 years of specializing in the design and manufacture of Casement Window Hardware.



THE CASEMENT HARDWARE CO.
408C N. Wood Street, Chicago, Ill.

GENTLEMEN:

Send me literature on your hardware and name of nearest dealer who can show it to me.

NAME _____

ADDRESS _____

Majestic

Send For Your Copy of This Valuable Catalog - Data Book

Every page of this latest Majestic Catalog contains practical information that builders and building designers will want—and should have. This fully illustrated book describes an extensive line of modern, economical building products that add permanent value and strong sales appeal to any home . . . products that bear a name famous for top quality for 35 years—Majestic! It also includes complete details for constructing fireplaces that

operate perfectly, and many other useful facts. We'll send your copy promptly, without cost. Write for it today.



**The MAJESTIC
COMPANY**

757 Erie Street
Huntington, Indiana



**Extensive Line of
Quality Building Necessities**

LETTERS—

(Continued from page 122)

occasionally a little longer. It has been estimated that the average life of this type of sash cord is only $1\frac{1}{2}$ years. A fine grade of sash cord will last the lifetime of the house.

Cheap sash cord has sold, occasionally, as low as 60c a hank, or 100 feet of cord. The average price, however, is approximately 80c a hank. At a liberal estimate of 24 feet of cord per window and 12 windows per house, the cord cost is \$2.40. A good sash cord will cost \$1.10 to \$1.20 per hank. At an average price of \$1.15 and 12 windows per house, the total cord cost is \$3.45. The difference in cost per house is, therefore, \$1.05. For this small amount of money the contractor can install a good grade of sash cord that will last the lifetime of the house.

If contractors will take a moment to point out to prospective customers the slight difference in cost and the tremendous difference in utility value of good cord over poor grade cord, it is easy to see why customers who know will always use good cord.

A few contractors may say, "I can't be bothered with such a small item as sash cord." Unfortunately, the customers of these contractors will soon say to themselves, "I can't be bothered with that contractor."

B. W. JONES, Sales Manager, Puritan Cordage Mills

An Appreciated Gift

Deland, Fla.

To the Editor:

I have just received your card advising that the McCormick Lumber Co. of Deland has given me a year's reading matter. This is certainly fine as I have been buying your valuable magazine for years at the newsstands and enjoy every page of it.

J. E. DINGEE

A Pledge for Builders

Beckley, W. Va.

To the Editor:

As one who helps build the homes of the world, I pledge myself to deal honestly with those who seek homes, be they rich or poor, experienced traders or babes in arms.

Realizing that even today's marvelous homes can be improved in convenience, durability and beauty, I pledge myself to keep an open mind toward new methods and materials which will advance the long evolution from the mud hovel.

I believe that the conveniences of modern life should be made available to all, regardless of their position in life, and I pledge myself to give progressively greater values, that the blessings of modern housing may become universal.

I pledge myself to oppose ugly imitations of makeshifts of the past, while seeking to retain all that is worth while and lovely in the heritage of the ages.

Since durability but adds years of regret to the home which is not conveniently designed, or which does not reflect the fundamentals of beauty, I pledge myself to build only homes which are in line with today's knowledge.

As a good home in a poor location automatically drops in value and utility, I promise to uphold home ownership as a profitable investment by refusing to build sub-standard homes in good locations, or good homes in sub-standard locations.

Because I must be prepared to build tomorrow's homes, as well as those of today, I pledge myself to ask a price which is fair to myself and to my associates, as well as to the seekers of homes; and I furthermore pledge myself to avoid the destructive competition for business which inevitably results in loss to home owners as well as to my great industry; pledging myself to build only homes which should be a constant source of happiness to their occupants.

MONROE WORTHINGTON, Builder.

\$1.00-a-Day Home

(Continued from page 50)

where economy consistent with saleability is the watchword.

For the two 1940 houses we are providing about twenty-five alternate designs showing porch and garage additions and various lot placements, so that a developer can utilize a single plan without having the deadly sameness of

appearance that is fatal to so many developments.

Literature: A Dealer-Builder Manual, "How to Make More Money and Do More Business with Lower Cost Small Homes," which discusses the market, the fundamentals of low-cost house construction, and some of the cost saving processes now being applied by successful small home builders throughout the United States.

A Consumer Manual, "How to Acquire a New Home at Less than One Dollar a Day," which will stress that houses are easier to buy in 1940 than in any other year in our history. It will explain the easy financing and it will discuss such subjects as how to help your builder get his lowest cost; the things the builder should know before he asks a price; the high cost of misunderstandings, and things you can do without. All of this manual is directed to the home owner, and is directed at making the home owner realize that he cannot have a \$10,000 house for less than \$5,000, but that he can make a start; that basic shelter is more important than constant loss of rent money and more important than the gold plated door knobs and the lavender bath tubs.

Advertising: A Small Homes Mat Service, consisting of ready-written newspaper ad copy in mat form, and a semi-weekly building page editorial service, including house plan mats.

Publicity Material: A custom-prepared publicity service of stories for press and radio. Low-cost building is news and information concerning building is acceptable editorial material for local newspapers, and all material will be custom-prepared to meet local conditions and circumstances. Lumber dealers about to organize a local Small Homes Program or Repair Program will find this made-to-order service most helpful.

Other Promotion Aids: There will also be furnished model home displays and lantern slide presentations of the low-cost small home suitable for local meetings of contractors, builders and architects which will tell a story, will be practical and will stimulate discussion.

House Plan Service: There will be plans for the 1940 engineered small homes designs, including cutting lists and specifications.

The market is waiting, more and more builders are learning, and more and more builders should learn that this country is beginning an era which gives the building industry the best opportunity to sell its goods and services that it has had in a decade.

* * *

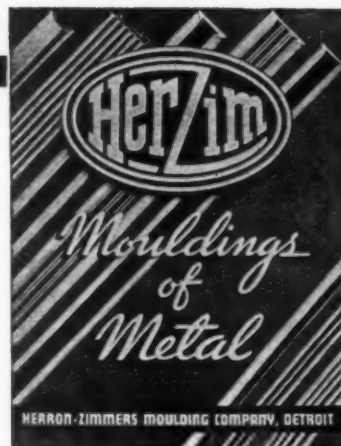
Speed Work with Compressed Air

(Continued from page 102)

15. The pneumatic paint spray is in common use.
16. The pneumatic screw driver is available.
17. A pneumatically operated plastering machine has been developed and given practical tests.
18. Cement gun stucco.
19. Blowing in insulation.

All of these operations can be carried with machines already developed and on the market, and it would seem that they alone would make it well worthwhile for the building contractor to buy or rent a small portable compressor and keep it on his job. Undoubtedly the adoption by the building trade of compressed air for the purposes where they could now use it would lead to the development by the machinery manufacturers of many more new and improved appliances and tools.

All this leads to the question: "Is the building trade overlooking an important possibility in its attempts to break the present log jam in residential building, by not investigating thoroughly the possibilities of the use of pneumatic machinery?"



**METAL
MOULDINGS
for the
BUILDING
INDUSTRY**

Catalog on Request

Distributors

Attractive opportunities are available in certain desirable territories, for sound organizations or individuals, selling to builders, contractors, building supply dealers, linoleum and flooring contractors. Must be able to carry representative stocks and service local accounts.

HERRON-ZIMMERS MOULDING COMPANY
3904 E. Outer Drive Detroit, Mich.

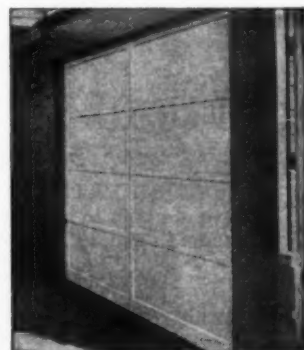
Every garage owner is a CRAW-FIR-DOR prospect

It's the Fastest-selling Overhead-type Garage Door in U.S.

PRICE ONLY \$28 RETAIL PRICE ANY U.S. JOBBING CENTER

- Equipped with cylinder lock at no extra cost.
- Can be installed in less than half a day.
- Pre-fitted for 8'x7' openings. 3 designs.
- Durable Douglas Fir door. Sturdy hardware.

Here's the ideal garage door for every house you build or modernize! It's low-priced and the price includes lock. It's easy to install and operate... needs no servicing. The durable Douglas Fir door comes pre-fitted and drilled for the extra-strength hardware. The 8-panel design retails for \$28 in most localities; the two 16-panel designs are slightly higher. If your regular source of supply doesn't handle Craw-Fir-Dors, write Fir Door Institute, Tacoma, Wash. or Crawford Door Co., Detroit, Mich.



Craw-Fir-Dor
SELF ENERGIZING • ONE PIECE • OVERHEAD TYPE



New, Low Cost Entrances

• Beauty plus Economy

DESIGNED, proportioned and priced especially for your small house market. BILT-WELL quality throughout. For 3'0"x7'0" door (adjustable to 2'8"x6'8" door). Standard base, reversible pilasters and in-

terchangeable heads assure customer satisfaction without additional work or expense. Used by hundreds of successful builders. Add beauty and value to small homes—install BILT-WELL Entrances. 7 additional stock designs in the full line. Write today for Free literature.

CARR, ADAMS & COLLIER COMPANY

P. O. BOX 658-G, DUBUQUE, IOWA

Manufacturers of Famous BILT-WELL Millwork



**TOO COLD
for comfort--
NOT COLD ENOUGH
to start the furnace**

To care for such a contingency, every bathroom should be equipped with this handsome, built-in unit . . . the

**ELECTRIC
QUIKHETER**

A flip of the switch—and there is quick, safe heat—the room is comfortably warmed in a few minutes. And when the furnace is in operation, and extra heat is needed, the QUIKHETER supplies it quickly.

Artistically Finished in Chromium

and installed flush with the wall, the QUIKHETER is an ornament as well as a producer of comfort and conservator of health. Made in 1,000 to 3,000 watt sizes, for small and large rooms—and priced economically.

Recommend the Installation

of the QUIKHETER in new construction and in remodeling—not only in bathrooms, but in bedrooms, dressing-rooms and children's playrooms.

There is a Wholesaler Near You

who will make quick delivery from stock. Write us for his name—and for descriptive circular.

Frank Adam
ELECTRIC COMPANY
ST. LOUIS

The Steel Square—

(Continued from page 67)

commonly known in the trade, it has been thought worth while for some of the younger members of the craft to give the name by which the different parts are usually called. These names may differ somewhat in various parts of the country and among different groups of workmen. In Fig. 1 and Fig. 2 are shown the two sides of a standard steel square and it may be said that although some very old squares may be somewhat different from this, the newer tools are pretty much all alike, at least in this country, no matter where bought.

THE TONGUE: The shorter and narrower arm of the steel square which almost always is made sixteen inches long, and one and one half inches wide, is called the "tongue." In some squares made for special purposes the tongue is only twelve inches long and one inch wide, while in others the tongue is eight inches long and one inch wide. There may still be in use older squares which have tongues only fourteen inches long instead of sixteen inches. Squares may also be bought with the tongue eighteen inches long.

THE BODY OR BLADE: The longer and wider arm of the square is sometimes known as the "body" and sometimes it is called the "blade," and its dimensions are in most squares twenty-four inches in length by two inches in width, but here again squares made for special purposes differ from the standard square, those having twelve-inch tongues being made with eighteen-inch by one and one-half inch blades, while squares with eight-inch tongues have blades measuring only twelve inches long by one and one-half inches wide.

THE "FACE" AND THE "BACK": One side of the square is called the "face" and one can tell which side this is because the manufacturer's name and trademark is always to be found stamped on this side near the corner. Take hold of the body or blade of the square with the left hand and hold it with the tongue pointing towards you, and you will then be looking at the "face." The other side of the tool is the "back."

THE HEEL: The word "heel" used with reference to the square usually means the corner of the tool in which the two outside edges meet (point A in Fig. 3), but it may sometimes refer to the point where the two inside edges intersect each other (point D in Fig. 3). At these points the two edges of the square (which meet there) are exactly at right angles to each other; that is to say, they form an angle of ninety degrees with each other or what is called a "right" angle. This is the reason why the tool is called a "square," because the two outside edges are exactly square with each other and this is true also of the two inside edges.

The Right Triangle

Take a smooth board about six inches wide and three feet long and dress both edges straight and true, making the board the same width at each end so that the two edges are exactly parallel to each other. Now take the steel square and place it on the smooth side of the board so that one edge of the board passes through the two outside corners of the square, one at the end of the tongue and the other at the end of the blade or body of the square as shown in Fig. 3. With the square in this position the edge of the board B-C forms a line connecting points B and C on the square, and this line, together with the outside edges of the square A B and A C, forms a triangle as shown in Fig. 4.

This is a "right" triangle because the angle at the heel of the square (at A in Fig. 3) is an angle of 90 degrees or a right angle since the two outside edges of the square A B and A C are perfectly square to (or at right angles with) each other. The triangle DEF formed by the inside edges of the square and the edge E F of the board in Fig. 3 is also a right triangle and so is the triangle G A H Fig. 3, formed by the two outside edges of the square A G and A H and the edge of the board G H. These three right triangles are all of different sizes but are all similar to triangle A B C in Fig. 4.

The longest side of the triangle which is opposite to the right angle or to the heel of the square, such as B C in Fig. 3, is called the *Hypotenuse*, while the other two sides are called the *Base* and the *Altitude*. The altitude is always at right angles to the base, just as a plumb line is always at right angles to a level line. Now an important fact in connection with all right triangles is that if you take the altitude such as length A B, in Fig. 3, and Fig. 4, and draw out a square figure like Square 1 in Fig. 3, such that each of the four sides of the square is equal to the altitude (16

(Continued to page 128)

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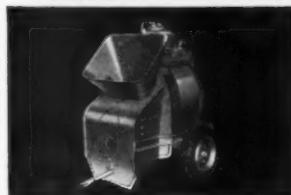
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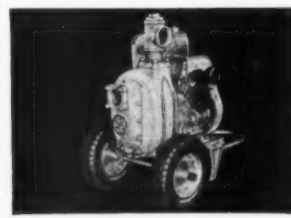
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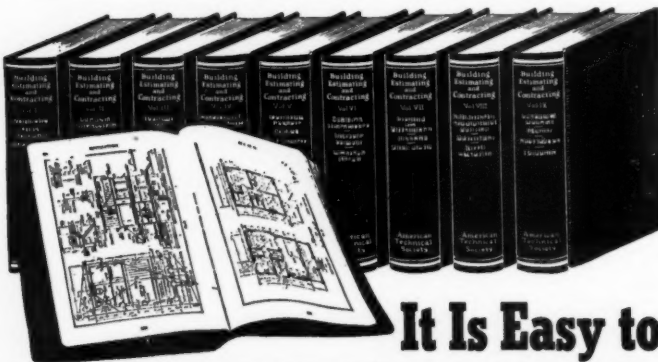
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The Steel Square—

(Continued from page 126)

inches in Fig. 3), and then if you take the base, such as length AC, in Fig. 3 and Fig. 4, and do the same thing with it, so as to form Square 2 in Fig. 3, then the area of Square 1 added to the area of Square 2 equals the area of the similar square which may be drawn out using the length of the hypotenuse for each of its four sides, such as Square 3 in Fig. 3. Thus the square of the base plus the square of the altitude equals the square of the hypotenuse. This fact is made use of in mathematics to find the length of the hypotenuse or slope when the altitude and the length of the base are both known, such as the rise and run of a roof slope. If you have a steel square you do not need to know or use the mathematical rule. All you have to do is to measure off the known altitude on the edge of the tongue of the square (as AG in Fig. 3) and measure off the known base on the edge of the blade (or body) of the square (as AH in Fig. 3) and then measure with a rule or the edge of another steel square the distance across the square between these two points (as distance GH in Fig. 3). Then this measured distance will be the correct length of the hypotenuse or the slope. If the known lengths of the altitude and the base are in feet (as for instance 12 ft. 6 inches), you can measure off the corresponding number of inches on the edge of the square such as 12½ inches and when you have measured off the length of the hypotenuse, or slope, in inches (it might be for instance 15¼ inches) you can call it feet instead of inches, which would give you fifteen and one-quarter feet or fifteen feet three inches.

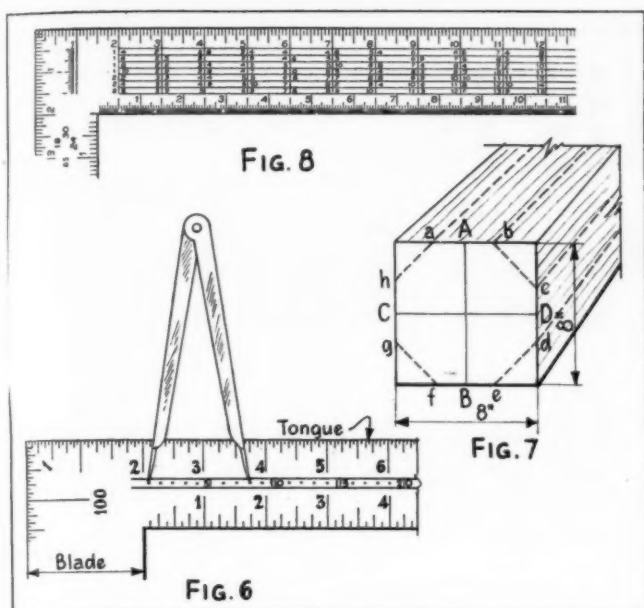
Scales on a Steel Square

The edges of the tongue and blade of a square both inside and outside are always straight and true and for this reason they, in ancient times, came to be used as rules. These edges were marked off into inches and fractions of an inch just like rules, but as there are four edges on each side of the square making eight edges in all, they were not all marked alike, but some were divided up into eighths of an inch, some into tenths of an inch, some into twelfths, and some into sixteenths, and thirty-seconds. Years ago squares made by different manufacturers had different markings, but nowadays the markings or "scales" on the steel square have become standardized, so that in the same place on any two steel squares you will find the same markings, except that on some cheaper squares the finer divisions, such as thirty-seconds of an inch, which cost the most to make, are omitted; the cheapest have edges divided into eighths and quarters of an inch.

Fig. 1 shows the "face" of a standard steel square and indicates the scales to be found on it—inches and sixteenths all around on the outside edge of the body and the tongue, and inches and eighths all round on the inside edges.

In Fig. 2 is shown the back of the standard square. Both outside edges are marked off into inches and twelfths. The inside edge of the tongue shows inches and tenths of an inch, while the inside edge of the body shows inches and thirty-seconds. In each case the scale starts at the heel of the square.

HUNDRETHS SCALE: On the back of the tongue of your square near the heel, but not on the edge, you may find a short scale one inch long, very finely divided as shown in Fig. 5. This is the inch divided into one hundred equal parts. It is intended for use with a pair of dividers by which decimals of an inch may be taken off. This scale is little used and does not occur on all steel squares. One may well ask what a carpenter has to do with hundredths of an inch when it is hard enough to work to sixteenths or thirty-seconds. One use for this scale, and about the only one, is to enable a workman to change quickly and without the use of mathematics any given number of hundredths of an inch into sixteenths or eighths of an inch. On the same side of the tongue of the square with the hundredth scale you will find in the middle of the tongue figures like this: 84° and 80° and 76°. (See Fig. 5). These figures are in connection with the "Brace Measure" which will be described and its use explained later. These figures mean eighty-four and eighty-five one-hundredths inches; eighty and fifty-one-one-hundredths inches and seventy-six and thirty-seven-one-hundredths inches. By taking the dividers and applying them to the one hundredth scale so as to measure off eighty-five one-hundredths and then locking the dividers and applying them without change to the thirty-seconds-inch scale which is to be found on the same side of the square on the inside edge of the body or blade, it will be seen at once that eighty-five-one-hundredths of an inch is the same as twenty-seven thirty-seconds



FIGS. 6 and 7: The eight square scale and how to use it in laying out octagons. Fig. 8: Essex Board Measure scale.

and nearly the same as fourteen-sixteenths or seven-eighths of an inch. In the same way it will be found that $\frac{51}{100}$ equals $\frac{16}{32}$ or $\frac{1}{2}$ an inch and that $\frac{37}{100}$ equals $\frac{12}{32}$ or $\frac{3}{8}$ inch.

EIGHT SQUARE SCALE: On the opposite side of the tongue from the hundredths scale and the Brace Measure, that is, on the face side of the tongue, is a scale called the Eight Square or the Octagon Scale, because it is used in laying out eight-sided or octagon figures. Sometimes it becomes desirable to change a square stick of lumber into an eight-sided stick for use as an octagon newel post or for some such purpose, and then it is necessary to lay out an octagon on the square end of the stick. In Fig. 6 is shown a part of the face of the tongue of a steel square with the Octagon Scale on it in the center of the tongue. There is a line of dots and every fifth dot is numbered 5, 10, 15, 20, etc. This means that the dots themselves are numbered one, two, three, four, etc., up to 20 or up to 65 at the end of the tongue. Now proceed as follows:

Cut the end of the stick square with the sides. The end will be a square; assume it to be 8 inches on each side. Find the center of each side as shown at A, B, C and D in Fig. 7, and draw lines AB and CD. With dividers or a rule, measure off on the octagon or eight-square scale on the tongue of the square the length of 8 spaces, since the timber is 8 inches square. See Fig. 6. If the timber were 10 inches square, the length of 10 spaces would be measured off; if it were 12 inches square, 12 spaces and so on.

Having measured off the length of 8 spaces on the octagon scale (a distance of a little less than 2 inches), apply this measurement to each side of the square timber on both sides of the center points, A, B, C and D, as Aa, Ab, Bf, Be, Ch, Cg, Dc and Dd, Fig. 7. Now, joining the points ah, bc, de and fg will outline a figure having 8 equal sides on the end of the stick, and it can then be shaped to this form by cutting off the solid triangular pieces from each of the four corners.

ESSEX BOARD MEASURE: Another useful scale is the "Essex Board Measure" which is found in the middle of the back of the body or blade of the square and which can be made use of to find the number of "feet board measure" or F.B.M. in any stick of lumber by measuring the length in feet, the width in inches and the thickness in inches. The figures on the back of the body of the square called the Essex Board Measure will give directly the number of feet board measure in any board one inch thick of any length in even feet up to fifteen feet long and of any width. Then by simply multiplying the result thus obtained by the thickness of the stick in inches one will have the contents in feet board measure. This follows from the fact that a piece of board one inch thick, one foot long and

(Continued to page 132)



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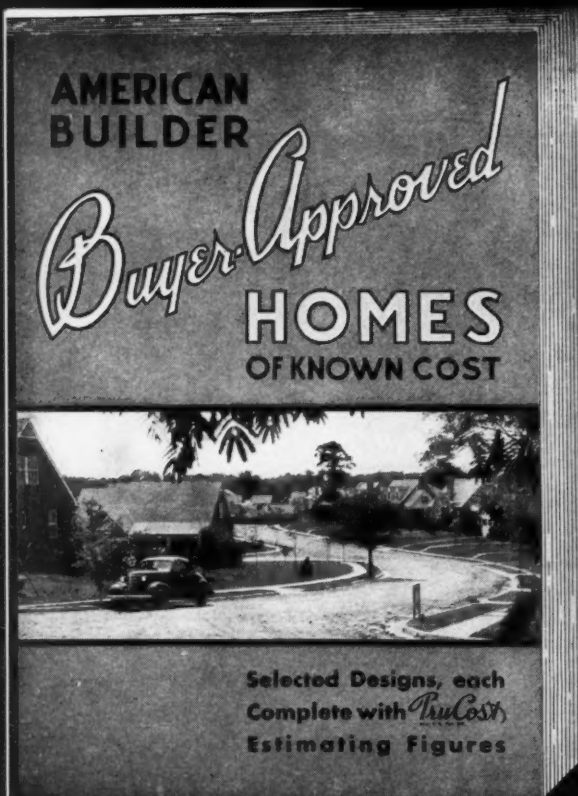


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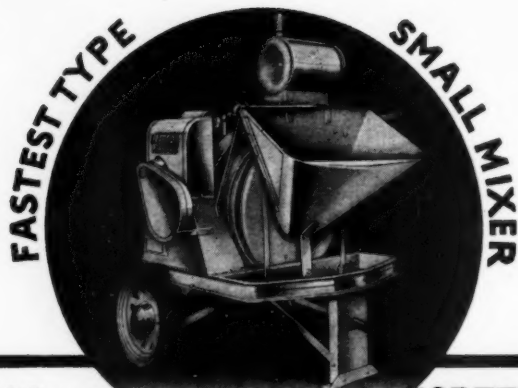
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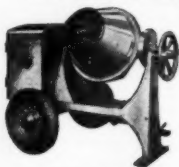
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The Steel Square—

(Continued from page 129)

twelve inches (or one foot) wide contains exactly one foot board measure, while a piece of the same length and width, but two inches thick, contains two feet board measure and a similar piece three inches thick contains three F.B.M. and so on. If the board is nine feet long instead of one foot long, it will contain nine times as many F.B.M. as it would if it were one foot long. If the board is six inches wide instead of twelve

inches wide, it will contain $\frac{6}{12}$ or one half as many F.B.M. as if it

were twelve inches wide; if eight inches wide, it will be $\frac{8}{12}$ or

two-thirds as many F.B.M. as if it were twelve inches wide and so on. Now on the outside edge of the back of the body or blade of the square (Fig. 8) are to be found the regular inch divisions 1, 2, 3, 4, 5, 6, etc. starting one inch from the heel of the square and under each of these figures there is a column of other figures on each side of a vertical line. When the square is used to find feet board measure the inch markings along the outside edge are used to indicate the width in inches of the board or stick whose contents in F.B.M. are required, such as 6 inches wide, 10 inches wide, 12 inches wide and so on. The columns of seven figures which will be found under each of these inch divisions give directly in feet (to the left of the vertical line) and twelfths of a foot (to the right of the vertical line) the F.B.M. in boards one inch thick and of width equal to the inch marking at the head of the column in each case and of seven different lengths. To find out what these seven lengths are, look in the column under the figure 12 where they are given as 8 feet, 9 feet, 10 feet, 11 feet, 13 feet, 14 feet, and 15 feet starting at the top. There is no figure 12 given in this column because 12 is at the top in the inch line next to the outside edge. Under each of the seven figures in the column is a horizontal line running lengthwise of the blade or body of the square. Now to find the F.B.M. in any board one inch thick and up to fifteen feet long, locate in the column under the 12-inch mark the figure corresponding to the length (in feet) of the board and then follow back to the left (towards the heel of the square) along the horizontal line under this figure until you come to a point under the inch mark which corresponds to the width of the board in inches. There you will find a figure which is the contents in F.B.M. of the board or stick one inch thick. The figure appearing at the left hand side of the vertical line is even F.B.M. and the figure appearing at the right hand side of the vertical line is twelfths of an F.B.M. If the board or stick of which the contents in F.B.M. are wanted is wider than 12 inches, then find the number corresponding to its length (in even feet) in the column under the inch mark 12 and then follow the horizontal line under this figure to the right instead of to the left until you come to the column of figures under the inch graduation on the outside edge of the square which corresponds to the width of the board or stick in inches. The contents in F.B.M. will be found in this column on the square the same as explained for a narrower board. Since any stick of lumber such as an 8 by 16, for instance, can be considered to be made up of a number of one-inch thick boards (in this case 16 boards) each 8 inches wide by one inch thick; the Essex Board Measure on the steel square can be used to find the F.B.M. in almost any piece up to a length of fifteen feet. A piece longer than fifteen feet can be considered as being cut up into two or more shorter lengths and the F.B.M. for each of these shorter lengths can be found and the results added together.

The use of the Essex Board Measure on the steel square will be illustrated by the two following examples:

Example 1: Find the F.B.M. in a board 1 inch thick, 11 feet long and 10 inches wide.

First look in the column of figures underneath the 12 inch mark on the outside edge of the back of the blade and near the middle of the blade you will find the figure 11. Follow along to the left on the horizontal line underneath the figure 11 until you come to the column of figures underneath the 10 inch mark and there you will find the figures 9/2, which stands for nine and two-twelfths feet board measure, which is the F.B.M. of the board. If the board were thicker than 1 inch, you would multiply this result by the thickness of the piece in inches. If the

(Continued to page 134)

Now on the Press SIMPLIFIED CARPENTRY ESTIMATING

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*Head, Building Trades Department,
Frank Wiggins Trade School,
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Clell M. Rogers

*Mathematics Instructor, Venice High
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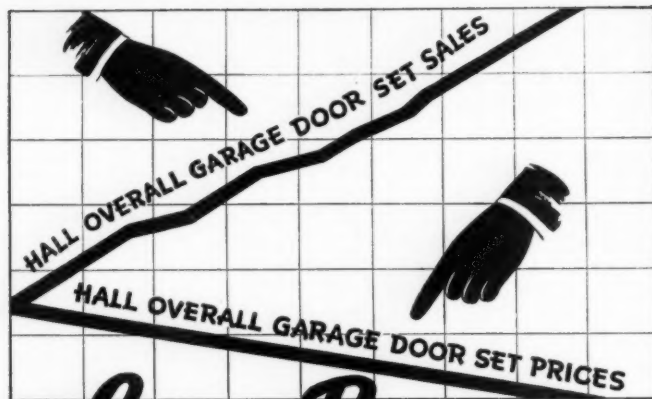
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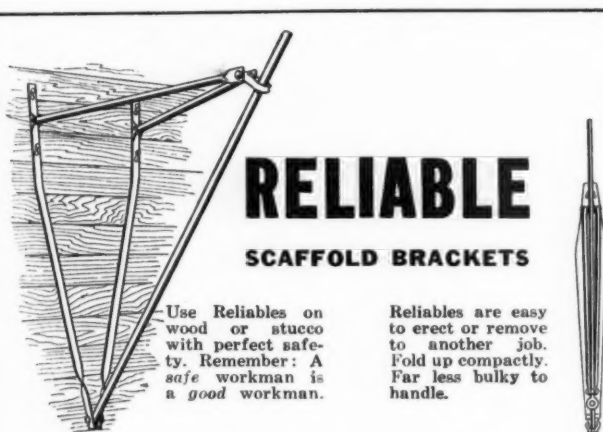
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The Steel Square— (Continued from page 132)

piece were more than 12 inches wide, you would follow the horizontal line underneath the figure 11 in the 12-inch column to the right instead of to the left.

A length of 15 feet is the longest indicated in the column of figures underneath the 12-inch mark on the outer edge of the back of the blade. If the F.B.M. is required for a stick longer than this, it can be found by following the rule given above in Example 1, but using only half the actual length and then doubling the result, since it is clear that doubling the length of a piece of timber doubles the contents in F.B.M.

In order to show how to deal with a larger and longer stick of timber, another example is given.

Example 2—Find the F.B.M. in a timber 8 inches wide, 16 inches deep and 21 feet long.

Divide the length of 21 feet into two parts, 10 feet and 11 feet. Let the 8-inch dimension be taken as the width and consider the timber to be made up of 16 separate boards each 1 inch thick and 8 inches wide. Find the F.B.M. for one of these boards and multiply the result by 16 to get the whole F.B.M. of the piece of lumber. Following the procedure used in the previous example and referring to Fig. 8, a 1-inch board 10 feet long and 8 inches wide contains 6-8/12 F.B.M. and a board 11 feet long and 8 inches wide contains 7-4/12 F.B.M. Adding these together gives 14 F.B.M. and multiplying by 16 gives 224 F.B.M. as the contents of the entire stick.

How to Make and Use a "Fence"

There is a tool which can be of great help whenever the steel square is employed and which can be made by the carpenter himself. This tool is called a "fence" and is usually made out of hardwood, such as walnut or cherry. A piece of clear stuff about three feet six inches long should be carefully selected and dressed down to a width of 2 inches and a thickness of 1½ inches. A line should be marked off along the exact center of each edge for the full length and a "kerf" of sufficient width so that the steel square will pass into it, should be cut at each end extending for a length of about sixteen inches, so that a length of about eight or nine inches at the middle of the piece will remain solid. This is illustrated in Fig. 9. The fence may now be placed over the steel square as shown in Fig. 9, with the blade or body in one kerf and the tongue in the other. It will be seen that the steel square and the fence together now form a right triangle such as was described hereinbefore with the "fence" as the longest side and the body and tongue of the square as the other two sides, which will of course be at right angles to each other. Now to prevent the fence from sliding about on the square and to make it stay in any desired position, one or more 1½ inch screws of No. 10 size should be put in each end of the fence as shown in Fig. 9. By means of these screws or by the use of wing bolts placed in the same way the kerfs can be tightened up and will cling tightly to the sides of the square. Fig. 10 shows how the fence can be used for the purpose of placing the square repeatedly in the same relative position along a piece of lumber quickly and easily and at the same time accurately. The usefulness of this will be explained in subsequent articles.

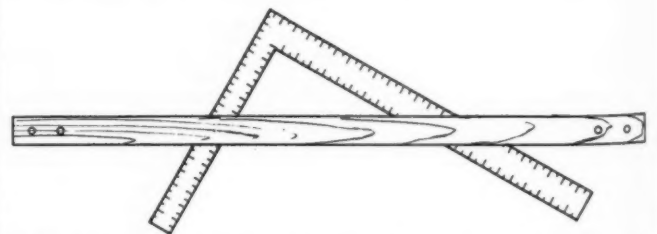


FIG. 9. A piece of stock is cut to fit square as shown to convert it into a fence.

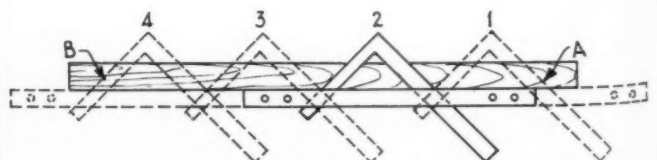


FIG. 10. In using a fence, the same relative position of square is maintained.

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(Continued to page 136)



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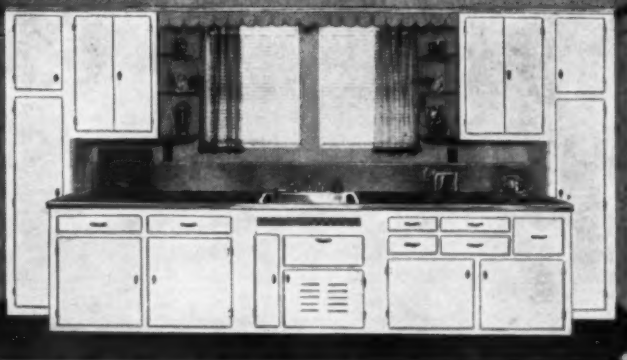
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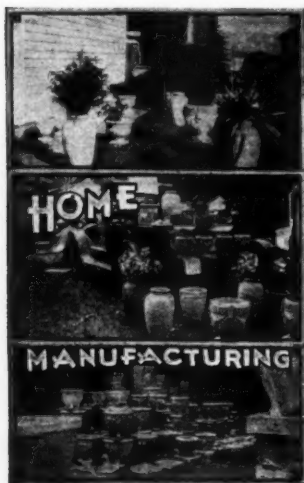
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CATALOGS—

(Continued from page 135)

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(Continued to page 138)

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The series of articles by Mr. Wilson, under the title, "How to Estimate Accurately," which ended in the December issue of "American Builder and Building Age" will be revised, expanded and fully illustrated in a handbook called "Simplified Carpentry Estimating." Mr. Wilson has been assisted in this by Mr. Rogers, who has added helpful tables and other mathematical data. The new estimating book will be ready about March 1st.

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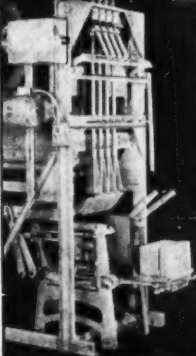
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(Continued from page 136)

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"WOOD PRESERVATION"—A de luxe brochure of 24 pages and covers effectively illustrated in black and orange explains Wolman Salts and the use of Wolmanized lumber for many industrial and construction uses.—AMERICAN LUMBER & TREATING CO., 37 W. Van Buren St., Chicago, Ill.